LAKE MICHIGAN WATER DIVERSION

[No. 83-7]

HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC WORKS
HOUSE OF REPRESENTATIVES

EIGHTY-THIRD CONGRESS

FIRST SESSION

ON

H. R. 3192, H. R. 3193, H. R. 3194, H. R. 3195, H. R. 3196, H. R. 3197, H. R. 3208, H. R. 3209, H. R. 3210, H. R. 3211, H. R. 3212, H. R. 3213, H. R. 3214, and H. R. 3300

TO AUTHORIZE THE STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO, UNDER THE DIRECTION OF THE SECRETARY OF THE ARMY, TO HELP CONTROL THE LAKE LEVEL OF LAKE MICHIGAN BY DIVERTING WATER FROM LAKE MICHIGAN INTO THE ILLINOIS WATERWAY

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LAKE MICHIGAN WATER DIVERSION

WEDNESDAY, JULY 15, 1953

HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC WORKS,
Washington, D. C.

The committee met, pursuant to notice, at 10 a. m., in room 1302, New House Office Building, Hon. George A. Dondero (chairman) presiding.

Mr. DONDERO. The committee will come to order.

This morning has been set for the beginning of hearings on water diversion at Chicago. A list of witnesses has been handed to me, and there have been a number of bills introduced, all very nearly identical, with the exception of one. The committee at the suggestion of some of the proponents, will consider the one bill introduced by Congressman Jones, of Chicago. The other bills fall in line and have the same objective as that bill.

(H. R. 3300 is as follows:)

[H. R. 3300, 83d Cong., 1st sess.]

A BILL To authorize the State of Illinois and the Sanitary District of Chicago, under the direction of the Secretary of the Army, to help control the lake level of Lake Michigan by diverting water from Lake Michigan into the Illinois waterway

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to regulate and promote commerce among the several States and foreign nations and to protect, improve, and promote navigation and navigable waters in the Illinois waterway and Mississippi Valley, and help control the lake level, and to afford protection to property and shores along the Great Lakes, and to provide for a navigable Illinois waterway, the State of Illinois and Sanitary District of Chicago, under the supervision and direction of the Secretary of the Army, are hereby authorized to withdraw from Lake Michigan on the Great Lakes, in addition to all domestic pumpage, a total annual average of two thousand five hundred cubic feet of water per second, to flow into the Illinois waterway heretofore authorized by Congress for a period of three years from and after the enactment of this Act: *Provided*, That, as soon after the enactment of this Act as is possible, the Secretary of the Army shall cause a study to be made of the effect, if any, in the improvement in conditions in the Illinois waterway by reason of the increased diversion herein authorized, and shall, on or before January 31, 1956, report to the Congress as to the results of said study with his recommendation as to the continuation, increase, or decrease in the amount of increased diversion herein authorized.

Mr. DONDERO. The committee thinks that the Corps of Army Engineers should be heard first on this matter, and then we will hear the witnesses who have come long distances, rather than Members of Congress. I hope that is satisfactory to everybody.

Colonel Milne, you are here to represent the Corps of Army Engineers?

STATEMENT OF COL. W. D. MILNE, UNITED STATES ARMY, CORPS OF ENGINEERS

Colonel MILNE. Yes, sir.

Mr. DONDERO. We will be glad to hear you at this time in regard to this project.

Colonel MILNE. Mr. Chairman, the bill you have in front of you is H. R. 3300. I should like to preface my remarks with this statement: The report on the bill—the proposed report of the Secretary of the Army—was transmitted to the Bureau of the Budget, but to my knowledge has not been forwarded from the Bureau of the Budget to this committee. Consequently my remarks represent only the proposed comments of the Secretary. We do not know what the Bureau of the Budget has to say on it.

I would like to take just a moment of the committee's time to give you a little background information on the effects of H. R. 3300. Basically this bill would authorize the diversion of 2,500 cubic feet of water per second in addition to domestic pumpage, for 3 years, providing the Secretary of the Army shall report the effects of the increased diversion to the Congress by January 31, 1956, with his recommendations as to the continuance of the diversion.

Briefly, that simply means that the city of Chicago will be authorized to divert an additional 1,000 second-feet.

Mr. DONDERO. What is it now?

Colonel MILNE. By law they are now limited to a diversion of 1,500 second-feet in addition to domestic pumpage. This would increase that amount to 2,500 second-feet.

Mr. DONDERO. To that extent that would be different from the decision of the Supreme Court?

Colonel MILNE. Yes, sir. The Court limited the diversion to 1,500 second-feet.

Mr. ANGELL. Mr. Chairman, may I ask the colonel a question?

Mr. DONDERO. Yes; Mr. Angell.

Mr. ANGELL. Colonel, is that the same as the bill that passed this committee last year?

Colonel MILNE. I believe it is, sir.

Since the initial decision by the Supreme Court on the 1,500 second-feet diversion there have ben a number of changed conditions in the waterway. The city of Chicago has developed since that time a very modern, up-to-date sewage disposal treatment plant. However, it is my understanding that they still feel that the authorized diversion of 1,500 second-feet is not sufficient to take care of the sanitary requirements of the area.

The Department of the Army favors H. R. 3300 to permit the diversion of an additional 1,000 second-feet. We feel that with that diversion over a period of 3 years we could study the effects on navigation and on flood control in the downstream reaches and report back to the Congress with our recommendations as to whether or not this increased diversion has any bad effects on either navigation or flood control.

The estimated cost to the United States of this study is $200,000, of which $150,000 would be required by the Department of Health, Education, and Welfare, and $50,000 would be required by the Corps of Engineers.

I have nothing further to offer, Mr. Chairman, unless you have some questions.

Mr. DONDERO. I have one question.

Do you think it feasible if some arrangement could be made so that under the control of the Army engineers when the water is high in the Great Lakes the gates could be opened and you would let water out, and when the water is low they could be closed in order to hold the water of the Great Lakes more on an even level so that navigation would not be affected adversely?

Colonel MILNE. In our studies of what might be the effect of this increased diversion, we came to this conclusion: That if 1,000 additional second-feet were authorized to be diverted the water levels on Lake Michigan and Lake Huron would be lowered by 0.12 foot, or roughly just under 2 inches, and 0.08 foot on Lake Erie and Lake Ontario, or about 1 inch. That would be the lowering effect of this increased diversion.

Mr. DONDERO. Does that amount of water in any way affect navigation adversely?

Colonel MILNE. In periods of high water like we have now on the Great Lakes, the lowering of the water level by that much, let us say 2 inches, would have no effect on navigation. In periods of low flow on the Great Lakes 2 inches could be of considerable importance to navigation. I think for every inch that they have to lower their draft on the lake carriers they carry 100 tons of iron ore less than they could with a full draft. In really low stages 2 inches would be something to consider. In periods of high water as far as navigation is concerned on the Great Lakes it would not be particularly important.

Mr. DONDERO. Does the committee understand even a difference of 1 inch of water makes a difference of 100 tons of cargo?

Colonel MILNE. The channels on the Great Lakes, Mr. Chairman, have 25-foot downbound depth. With the new ore carriers that have been developed since the war they practically use every inch of draft that they can. When they have to lower their draft because of adverse channel conditions even 1 inch, each ship carries 100 tons of iron ore less than capacity.

Mr. DONDERO. Are there any questions from the left?

Mr. ANGELL. Would such a proposal be limited only to the lowering of the lakes during the higher stages of water and not at the lower stages?

Colonel MILNE. This proposal, Mr. Angell, simply states that the Corps of Engineers will observe for a 3-year period the results, without regard to the lake levels. It says we will observe for 3 years the increased diversion. It makes no reference to whether it will occur during the period of high lake levels or low lake levels.

Mr. ANGELL. Would the engineers permit the lakes to be lowered at the low stages of the lakes?

Colonel MILNE. If you got into extremely low-water conditions we would have to consider very carefully the effect of any increased diversion. Today with the present stages it would not be a problem. Next year it would probably not be a problem. When it will be a problem, and when these lake levels are going to be extremely low, I can't say, Mr. Angell.

Mr. ANGELL. It is true, is it not, that last year they had extremely high water on the lakes?

Colonel MILNE. Yes, sir—extremely high.

Mr. ANGELL. It was high and not low?

Colonel MILNE. Yes, sir. We are in a high cycle now.

Mr. ANGELL. Have they had low stages in the last several years?

Colonel MILNE. We have not had low stages since the 1930's. We are in a high cycle and have been in one for a number of years. We know someday we will get back into a low cycle, but we don't know when.

Mr. ANGELL. This proposal really is to make a study and not to inaugurate a permanent program. Is that right, Colonel?

Colonel MILNE. That is correct. This would be a 3-year study, at which time we would report back to this committee.

Mr. ANGELL. And it would cost an estimated $200,000?

Colonel MILNE. Yes, sir.

Mr. DONDERO. I want to say to the engineer my State of Michigan has an average rainfall of 27 inches, but for the last 2 years the average has been 37 inches, which accounts for at least 20 inches more precipitation than we have had in many, many years, or in many, many decades. That accounts to some degree for the high water.

Colonel MILNE. That is very true, Mr. Chairman.

Mr. STAUFFER. I want to raise the point that, according to this bill, the study will have only to do with the effect of the water after it is diverted from the lakes, or the effects on the waterway from the Great Lakes down to the gulf.

Colonel MILNE. The study is devoted to determining what effects it would have in the Illinois Waterway as a result of this diversion. But, in fairness to this committee, if this study were authorized, we would have to, and would in our report, consider the effects on lowering of the lake levels.

Mr. STAUFFER. Why does it not so state in this bill, Mr. Chairman?

Mr. DONDERO. Are there any other questions from my left?

(No response.)

Mr. DONDERO. Are there any other questions from my right?

Mr. MACHROWICZ. Colonel Milne, as I remember it, last year the Sanitary District of Cook County requested a greater diversion than 2,500 feet. This amount of 2,500 cubic feet was arrived at after exhaustive hearings as a sort of compromise, with the proviso that a study should be made by the Corps of Engineers. This is really stopgap legislation, is it not?

Colonel MILNE. That is correct, sir.

Mr. DONDERO. Do you recognize any international question involved in this matter between the United States and Canada?

Colonel MILNE. We have not considered that complication, Mr. Chairman, in our report.

Mr. DONDERO. Should it lower the waters of the Great Lakes, of course, Canada would have the right to come in and object.

The reason I asked that question is that the Chairman of the International Joint Commission has just come in and is here in the audience with us.

Mr. ANGELL. I was going to ask, Does existing law permit lowering of this lake with reference to our treaty with Canada? I understand that that is determined by treaty and we cannot lower the lakes without the consent of Canada.

Colonel MILNE. I am not capable of answering that question. I think it is getting into a debatable point and it is more or less a matter of opinion. Mr. Stanley may have some answers I do not have on the subject.

STATEMENT OF A. O. STANLEY, CHAIRMAN OF THE INTERNATIONAL JOINT COMMISSION

Mr. STANLEY. Michigan is entirely in the United States, as you know. You are inquiring about the Chicago diversion?

Mr. ANGELL. That is right.

Mr. STANLEY. But Lake Michigan and Lake Huron are practically one body of water as far as natural conditions are concerned.

Mr. ANGELL. If we lower one lake, we lower them all, do we not?

Mr. STANLEY. If you withdraw water from Lake Michigan, it affects identically to withdrawing it from Lake Huron. It has the same effect as if you withdrew from international waters.

The men who negotiated the Boundary Waters Treaty understood that very well.

(A copy of the treaty is attached for inclusion in the record.)

TREATY BETWEEN THE UNITED STATES AND GREAT BRITAIN RELATING TO BOUNDARY WATERS, AND QUESTIONS ARISING BETWEEN THE UNITED STATES AND CANADA

The United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, Emperor of India, being equally desirous to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise, have resolved to conclude a treaty in furtherance of these ends, and for that purpose have appointed as their respective plenipotentiaries:

The President of the United States of America, Elihu Root, Secretary of State of the United States; and

His Britannic Majesty, the Right Honourable James Bryce, O. M., his Ambassador Extraordinary and Plenipotentiary at Washington;

Who, after having communicated to one another their full powers, found in good and due form, have agreed upon the following articles:

PRELIMINARY ARTICLE

For the purposes of this treaty boundary waters are defined as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.

ARTICLE I

The High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally, subject, however, to any laws and regulations of either country, within its own territory, not inconsistent with such privilege of free navigation and applying equally and without discrimination to the inhabitants, ships, vessels, and boats of both countries.

It is further agreed that so long as this treaty shall remain in force, this same right of navigation shall extend to the waters of Lake Michigan and to all canals connecting boundary waters, and now existing or which may hereafter

be constructed on either side of the line. Either of the High Contracting Parties may adopt rules and regulations governing the use of such canals within its own territory and may charge tolls for the use thereof, but all such rules and regulations and all tolls charged shall apply alike to the subjects or citizens of the High Contracting Parties and the ships, vessels, and boats of both of the High Contracting Parties, and they shall be placed on terms of equality in the use thereof.

ARTICLE II

Each of the High Contracting Parties reserves to itself or to the several State Governments on the one side and the Dominion or Provincial Governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that any interference with or diversion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary, shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs; but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto.

It is understood, however, that neither of the High Contracting Parties intends by the foregoing provision to surrender any right, which it may have, to object to any interference with or diversions of waters on the other side of the boundary the effect of which would be productive of material injury to the navigation interests on its own side of the boundary.

ARTICLE III

It is agreed that, in addition to the uses, obstructions, and diversions heretofore permitted or hereafter provided for by special agreement between the Parties hereto, no further or other uses or obstructions or diversions, whether temporary or permanent, of boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line, shall be made except by authority of the United States or the Dominion of Canada within their respective jurisdictions and with the approval, as hereinafter provided, of a joint commission, to be known as the International Joint Commission.

The foregoing provisions are not intended to limit or interfere with the existing rights of the Government of the United States on the one side and the Government of the Dominion of Canada on the other, to undertake and carry on governmental works in boundary waters for the deepening of channels, the construction of breakwaters, the improvement of harbours, and other governmental works for the benefit of commerce and navigation, provided that such works are wholly on its own side of the line and do not materially affect the level or flow of the boundary waters on the other, nor are such provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes.

ARTICLE IV

The High Contracting Parties agree that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance on their respective sides of the boundary of any remedial or protective works or any dams or other obstructions in waters flowing from boundary waters or in waters at a lower level than the boundary in rivers flowing across the boundary, the effect of which is to raise the natural level of waters on the other side of the boundary unless the construction or maintenance thereof is approved by the aforesaid International Joint Commission.

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.

ARTICLE V

The High Contracting Parties agree that it is expedient to limit the diversion of waters from the Niagara River so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. It is the desire of both Parties to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States

side of the river under grants of authority from the State of New York, and on the Canadian side of the river under licences authorized by the Dominion of Canada and the Province of Ontario.

So long as this treaty shall remain in force, no diversion of the waters of the Niagara River above the Falls from the natural course and stream thereof shall be permitted except for the purposes and to the extent hereinafter provided.

The United States may authorize and permit the diversion within the State of New York of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second.

The United Kingdom, by the Dominion of Canada, or the Province of Ontario, may authorize and permit the diversion within the Province of Ontario of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of thirty-six thousand cubic feet of water per second.

The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

ARTICLE VI

The High Contracting Parties agree that the St. Mary and Milk Rivers and their tributaries (in the State of Montana and the Provinces of Alberta and Saskatchewan) are to be treated as one stream for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries, but in making such equal apportionment more than half may be taken from one river and less than half from the other by either country so as to afford a more beneficial use to each. It is further agreed that in the division of such waters during the irrigation season, between the 1st of April and 31st of October, inclusive, annually, the United States is entitled to a prior appropriation of 500 cubic feet per second of the waters of the Milk River, or so much of such amount as constitutes three-fourths of its natural flow, and that Canada is entitled to a prior appropriation of 500 cubic feet per second of the flow of St. Mary River, or so much of such amount as constitutes three-fourths of its natural flow.

The channel of the Milk River in Canada may be used at the convenience of the United States for the conveyance, while passing through Canadian territory, of waters diverted from the St. Mary River. The provisions of Article II of this treaty shall apply to any injury resulting to property in Canada from the conveyance of such waters through the Milk River.

The measurement and apportionment of the water to be used by each country shall from time to time be made jointly by the properly constituted reclamation officers of the United States and the properly constituted irrigation officers of His Majesty under the direction of the International Joint Commission.

ARTICLE VII

The High Contracting Parties agree to establish and maintain an International Joint Commission of the United States and Canada composed of six commissioners, three on the part of the United States appointed by the President thereof, and three on the part of the United Kingdom appointed by His Majesty on the recommendation of the Governor in Council of the Dominion of Canada.

ARTICLE VIII

This International Joint Commission shall have jurisdiction over and shall pass upon all cases involving the use or obstruction or diversion of the waters with respect to which under Articles III and IV of this Treaty the approval of this Commission is required, and in passing upon such cases the Commission shall be governed by the following rules or principles which are adopted by the High Contracting Parties for this purpose:

The High Contracting Parties shall have, each on its own side of the boundary, equal and similar rights in the use of the waters hereinbefore defined as boundary waters.

The following order of precedence shall be observed among the various uses enumerated hereinafter for these waters, and no use shall be permitted which tends materially to conflict with or restrain any other use which is given preference over it in this order of precedence:

(1) Uses for domestic and sanitary purposes;

(2) Uses for navigation, including the service of canals for the purposes of navigation;

(3) Uses for power and for irrigation purposes.

The foregoing provisions shall not apply to or disturb any existing uses of boundary waters on either side of the boundary.

The requirement for an equal division may in the discretion of the Commission be suspended in cases of temporary diversions along boundary waters at points where such equal division can not be made advantageously on account of local conditions, and where such diversion does not diminish elsewhere the amount available for use on the other side.

The Commission in its discretion may make its approval in any case conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provision, approved by the Commission, be made for the protection and indemnity against injury of any interests on either side of the boundary.

In cases involving the elevation of the natural level of waters on either side of the line as a result of the construction or maintenance on the other side of remedial or protective works or dams or other obstructions in boundary waters or in waters flowing therefrom or in waters below the boundary in rivers flowing across the boundary, the Commission shall require, as a condition of its approval thereof, that suitable and adequate provision, approved by it, be made for the protection and indemnity of all interests on the other side of the line which may be injured thereby.

The majority of the Commissioners shall have power to render a decision. In case the Commission is evenly divided upon any question or matter presented to it for decision, separate reports shall be made by the Commissioners on each side to their own Government. The High Contracting Parties shall thereupon endeavour to agree upon an adjustment of the question or matter of difference, and if an agreement is reached between them, it shall be reduced to writing in the form of a protocol, and shall be communicated to the Commissioners, who shall take such further proceedings as may be necessary to carry out such agreement.

ARTICLE IX

The High Contracting Parties further agree that any other questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and the Dominion of Canada, shall be referred from time to time to the International Joint Commission for examination and report, whenever either the Government of the United States or the Government of the Dominion of Canada shall request that such questions or matters of difference be so referred.

The International Joint Commission is authorized in each case so referred to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

Such reports of the Commission shall not be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award.

The Commission shall make a joint report to both Governments in all cases in which all or a majority of the Commissioners agree, and in case of disagreement the minority may make a joint report to both Governments, or separate reports to their respective Governments.

In case the Commission is evenly divided upon any question or matter referred to it for report, separate reports shall be made by the Commissioners on each side to their own Government.

ARTICLE X

Any questions or matters of difference arising between the High Contracting Parties involving the rights, obligations, or interests of the United States or of the Dominion of Canada either in relation to each other or to their respective inhabitants, may be referred for decision to the International Joint Commission by the consent of the two Parties, it being understood that on the part of the United States any such action will be by and with the advice and consent of the Senate, and on the part of His Majesty's Government with the consent

of the Governor General in Council. In each case so referred, the said Commission is authorized to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

A majority of the said Commission shall have power to render a decision or finding upon any of the questions or matters so referred.

If the said Commission is equally divided or otherwise unable to render a decision or finding as to any questions or matters so referred, it shall be the duty of the Commissioners to make a joint report to both Governments, or separate reports to their respective Governments, showing the different conclusions arrived at with regard to the matters or questions so referred, which questions or matters shall thereupon be referred for decision by the High Contracting Parties to an umpire chosen in accordance with the procedure prescribed in the fourth, fifth, and sixth paragraphs of Article XLV of the Hague Convention for the pacific settlement of international disputes, dated October 18, 1907. Such umpire shall have power to render a final decision with respect to those matters and questions so referred on which the Commission failed to agree.

ARTICLE XI

A duplicate original of all decisions rendered and joint reports made by the Commission shall be transmitted to and filed with the Secretary of State of the United States and the Governor General of the Dominion of Canada, and to them shall be addressed all communications of the Commission.

ARTICLE XII

The International Joint Commission shall meet and organize at Washington promptly after the members thereof are appointed, and when organized the Commission may fix such times and places for its meetings as may be necessary, subject at all times to special call or direction by the two Governments. Each Commissioner upon the first joint meeting of the Commission after his appointment, shall, before proceeding with the work of the Commission, make and subscribe a solemn declaration in writing that he will faithfully and impartially perform the duties imposed upon him under this treaty, and such declaration shall be entered on the records of the proceedings of the Commission.

The United States and Canadian sections of the Commission may each appoint a secretary, and these shall act as joint secretaries of the Commission at its joint sessions, and the Commission may employ engineers and clerical assistants from time to time as it may deem advisable. The salaries and personal expenses of the Commission and of the secretaries shall be paid by their respective Governments, and all reasonable and necessary joint expenses of the Commission, incurred by it, shall be paid in equal moieties by the High Contracting Parties.

The Commission shall have power to administer oaths to witnesses, and to take evidence on oath whenever deemed necessary in any proceeding, or inquiry, or matter within its jurisdiction under this treaty, and all parties interested therein shall be given convenient opportunity to be heard, and the High Contracting Parties agree to adopt such legislation as may be appropriate and necessary to give the Commission the powers above mentioned on each side of the boundary, and to provide for the issue of subpoenas and for compelling the attendance of witnesses in proceedings before the Commission. The Commission may adopt such rules of procedure as shall be in accordance with justice and equity, and may make such examination in person and through agents or employees as may be deemed advisable.

ARTICLE XIII

In all cases where special agreements between the High Contracting Parties hereto are referred to in the foregoing articles, such agreements are understood and intended to include not only direct agreements between the High Contracting Parties, but also any mutual arrangement between the United States and the Dominion of Canada expressed by concurrent or reciprocal legislation on the part of Congress and the Parliament of the Dominion.

ARTICLE XIV

The present treaty shall be ratified by the President of the United States of America, by and with the advice and consent of the Senate thereof, and by His Britannic Majesty. The ratifications shall be exchanged at Washington as soon as possible and the treaty shall take effect on the date of the exchange of its ratifications. It shall remain in force for five years, dating from the day of exchange of ratifications, and thereafter until terminated by twelve months' written notice given by either High Contracting Party to the other.

In faith whereof the respective plenipotentiaries have signed this treaty in duplicate and have hereunto affixed their seals.

Done at Washington the 11th day of January, in the year of our Lord one thousand nine hundred and nine.

(Signed) ELIHU ROOT [SEAL]
(Signed) JAMES BRYCE [SEAL]

AND WHEREAS the Senate of the United States by their resolution of March 3, 1909 (two-thirds of the Senators present concurring therein), did advise and consent to the ratification of the said Treaty with the following understanding, to wit:

"Resolved further, as a part of this ratification, That the United States approves this treaty with the understanding that nothing in this treaty shall be construed as affecting, or changing, any existing territorial or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of the St. Mary's river at Sault Ste. Marie, in the use of the waters flowing over such lands, subject to the requirements of navigation in boundary waters and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Mary's river, within its own territory, and further, that nothing in this treaty shall be construed to interfere with the drainage of wet swamp and overflowed lands into streams flowing into boundary waters, and that this interpretation will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will, in effect, form part of the treaty;"

AND WHEREAS the said understanding has been accepted by the Government of Great Britain, and the ratifications of the two Governments of the said treaty were exchanged in the City of Washington, on the 5th day of May, one thousand nine hundred and ten;

NOW, THEREFORE, be it known that I, William Howard Taft, President of the United States of America, have caused the said treaty and the said understanding, as forming a part thereof, to be made public, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In testimony whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington this thirteenth day of May in the year of our Lord one thousand nine hundred and ten.

[SEAL] and of the Independence of the United States of America the one hundred and thirty-fourth.

Wm H Taft

By the President:
P C Knox
Secretary of State.

PROTOCOL OF EXCHANGE

On proceeding to the exchange of the ratifications of the treaty signed at Washington on January 11, 1909, between the United States and Great Britain, relating to boundary waters and questions arising along the boundary between the United States and the Dominion of Canada, the undersigned plenipotentiaries, duly authorized thereto by their respective Governments, hereby declare that nothing in this treaty shall be construed as affecting, or changing, any existing territorial, or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of the St. Mary's River at Sault Ste. Marie, in the use of the waters flowing over such lands, subject to the requirements of navigation in boundary waters and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Mary's River, within its own territory; and further, that nothing in this treaty shall be construed to interfere with

the drainage of wet, swamp, and overflowed lands into streams flowing into boundary waters, and also that this declaration shall be deemed to have equal force and effect as the treaty itself and to form an integral part thereto.

The exchange of ratifications then took place in the usual form.

In witness whereof, they have signed the present Protocol of Exchange and have affixed their seals thereto.

DONE at Washington this 5th day of May, one thousand nine hundred and ten.

PHILANDER C KNOX [SEAL]
JAMES BRYCE [SEAL]

Mr. STANLEY. At the time this treaty was negotiated, you will find the statement in the testimony of Elihu Root—in order to avoid that question being raised he permitted the Canadians to take 16,000 more second-feet of water from the Niagara River at Niagara Falls than was given to the United States in that division of water under article V of the treaty. Although the treaty provides as a general thing that the diversion from international streams should be split 50–50 between the two countries there was a sort of gentleman's agreement that in lieu of that 16,000 second-feet the question of withdrawal through the Sanitary Canal of Chicago would not be raised.

That question was not raised until it came up before the Supreme Court, you remember in the case of *Wisconsin* v. *Illinois*. Then Justice Holmes held that, with respect to the withdrawal of 10,000 cubic feet per second, there was in effect a lowering of international waters, that it was a matter of interstate and international concern, and that the withdrawal of more than 1,500 cubic feet per second could not be made.

Mr. MACHROWICZ. Is it not true that Justice Holmes ruled a 1,500-foot diversion did not materially affect the levels?

Mr. STANLEY. Yes.

Mr. MACHROWICZ. And therefore it was justifiable?

Mr. STANLEY. Exactly. He held that diversion from Lake Michigan was in effect a diversion from international waters. But under the maximum of de minimis non curat lex he held a 1,500-foot diversion was not sufficiently material to justify an injunction, but that they could not take 10,000 feet without making it a matter for action by the Court.

Mr. ANGELL. What significance would a withdrawal of an additional 1,000 feet have on that?

Mr. STANLEY. I don't think the effect would be material. That is 1,500 or 2,500 feet. The 10,000 feet is only a few inches. You see, the flow of the Niagara River is so swift and so enormous, 200,000 feet, that 1,500 to 2,000 feet has very little effect.

Mr. MACHROWICZ. One more question.

You have no objection to this proposed diversion, do you?

Mr. STANLEY. None in the world. Let me qualify that, Mr. Chairman. In fact, in its present status, it is not for the Commission to object or to approve. We are an international tribunal and these matters are referred to us by the two Governments. But speaking personally—under present conditions when we are troubled by the unusually high waters in Lake Ontario, the diversion of a larger amount of water at Chicago would be beneficial to the lake conditions.

Mr. DONDERO. Thank you very much, Mr. Stanley, for your statement.

Congressman Jonas, whose bill the committee is considering by way of agreement among all of the Members who have filed bills in regard to this matter, is here with us now.

Mr. Jonas, would you like to make a statement to the committee?

STATEMENT OF HON. EDGAR A. JONAS, MEMBER OF CONGRESS FROM THE 12TH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. JONAS. Mr. Chairman and members of the committee, I reduced what I thought might be relevant in this issue to writing, so what I want to say I have in typewritten form and I would like to offer that for the record at this time. I will not burden the committee with reading what I have set out here.

Mr. DONDERO. The statement may be received and made a part of the record.

Mr. JONAS. Yes. I would like to offer it and have it received for the record.

Mr. DONDERO. Without objection, it will be made a part of the record.

(The statement of Mr. Jonas is as follows:)

STATEMENT OF HON. EDGAR A. JONAS OF ILLINOIS IN SUPPORT OF H. R. 3300

Mr. Chairman and members of the committee, the bill under consideration here today—H. R. 3300—is a measure which would authorize the State of Illinois and the Sanitary District of Chicago, under the direction of the Secretary of the Army, to withdraw from Lake Michigan, in addition to all domestic pumpage, a total annual average of 2,500 cubic feet of water per second, to flow into the Illinois Waterway for a period of 3 years from and after enactment of the bill.

In addition, the measure provides that as soon as possible after it becomes law the Secretary of the Army shall cause the Corps of Engineers to make a study of the effect, if any, in the improvement of conditions in the Illinois Waterway by reason of the increased diversion. The results of this study are to be reported to the Congress on or before January 31, 1956, and the Secretary of the Army is to make recommendations as to the continuation, increase, or decrease in the amount of increased diversion authorized by the act.

A similar bill, H. R. 8165, received favorable action by this committee during the 82d Congress, but did not receive further consideration because the Rules Committee did not report it out for final disposition by the full House. The committee report, No. 2173, was made by Mr. Larcade, presently a Member of this distinguished body.

The bill under consideration here today—H. R. 3300—has the unanimous support of the Republican Members of the House who are elected from Chicago and the Cook County area, and the unanimous support of the eight Democratic Members of the House elected from the State of Illinois. In addition, the purposes and objectives of this measure have received editorial support from the leading newspapers in the city of Chicago.

In connection with determining the efficaciousness of this legislation, the Corps of Engineers has made a very careful study of the overall situation. This study included all the details—geographic, engineering, and scientific—which can or may be affected by this legislation.

The written data now on file, including the testimony of the deputy chief of civil works for rivers and harbors of the Corps of Engineers and the final report of the Governor's committee to study Lake Michigan diversion, as well as other testimony at the hearings of last year, certainly appear by a great preponderance to support and approve the objectives sought through the enactment of this legislation.

Col. William B. Milne, the deputy chief of civil works, testified that the increased diversion—1,000 cubic feet per second—which would be authorized by this measure, could have little adverse effect on lake or river interests and would afford an opportunity to secure valuable information on the exact effects, favor-

able or otherwise, of the increased flow. In making its favorable report of last year, the committee laid stress upon Colonel Milne's testimony.

The final report of the Governor's committee to study Lake Michigan diversion, which report was filed with this committee a year ago, made eight significant points in favor of the proposed legislation, and I repeat them here:

1. The increased diversion would not increase the flood hazard in the lower sections of the waterway to any appreciable extent.

2. In view of the complete treatment of the sanitary district's sewage facilities, pollution of the waterway has been cut to a minimum, and increased diversion would restore it to a wholesome condition by raising the oxygen content of the water and diluting the excess nitrogen.

3. The increase in the current of the stream would be so slight it would not have any material effect on the costs of the barge operators.

4. Restoration of the waterway to a wholesome condition would provide relief for more than 1 million of our citizens along the upper reaches of the waterway who at present are plagued by the malodorous conditions caused by the sluggish flow.

5. The object of the proposed increase in lake diversion is not to provide increased hydroelectric facilities.

6. Canada has no proper interest in the amount of water diverted from Lake Michigan which lies entirely within the United States.

7. Increased diversion would have little or no effect on lake levels.

8. The matter of diversion from Lake Michigan is properly the responsibility of the Congress of the United States, notwithstanding that the United States Supreme Court has reserved jurisdiction of certain phases of the problem.

Others who came here last year to support this legislation included a representative of the Association for the Protection of Great Lakes Property, a nonprofit organization whose members have suffered great property damage as a result of high lake levels during the past several years.

For the past several years, the level of Lake Michigan has been exceptionally high. Because of this high level, lake storms have ravaged the coastlines, particularly those on the west coast of Michigan and the east coast of Illinois, and the damage in areas above and below Chicago has run into considerable sums of money. If this small diversion would lower the lake level by as little as 1 inch, this storm damage would be lessened to some extent.

At the present time, authorized diversion from Lake Michigan is 1,500 cubic feet per second, and this is the amount which has been authorized since 1933. In the past 20 years, the city of Chicago and the area along the Illinois waterway have experienced a population increase of well over 1 million. In the same span of years, traffic on the Illinois waterway has increased from 200,000 tons a year to over 16 million tons a year. These figures make it very plain that the 1,500 cubic feet per second diversion presently authorized is inadequate.

Chicago would not be the sole beneficiary of this legislation, which, by the way, is not a project which asks for a congressional appropriation. At least a million residents along the upper reaches of the waterway would have relief from unpleasant conditions caused by the presently sluggish flow. The citizens of Chicago and those along the waterway very definitely need the increased diversion as a safeguard to their health.

Commerce over a wide area would benefit from the proposed increased diversion—the Illinois waterway very muchly needs the additional water if it is to adequately handle the ever-mounting traffic which, as I mentioned a moment ago, is now at an annual rate of 15 million tons.

In addition, marine life in the waterway and commercial fishing in the Illinois River are being damaged because the present low diversion, after using a considerable portion of it as sewage disposal, lacks sufficient oxygen to properly sustain marine life with the result that it is constantly diminishing.

Summarizing, H. R. 3300, if enacted into law, will accomplish much good and certainly it can do no harm.

1. It will improve health conditions not only in Chicago but for considerable distances along the waterway.

2. It will reduce storm damage to lakefront properties in both Michigan and Illinois.

3. It will aid the growing navigation of the Illinois waterway without adding to flood hazards in the lower sections of the waterway.

4. Marine life and commercial fishing of the region will be greatly benefited.

Finally lake and river interests are amply safeguarded in that the measure directs a study by the Secretary of the Army of the effect, if any, in the "improve-

ment in conditions in the Illinois waterway by reason of the increased diversion" authorized. The Secretary is further directed to report to the Congress the results of that study on or before January 31, 1956, with his recommendation as to the "continuation, increase, or decrease in the amount of increased diversion."

With the benefits to be gained, and the protection to be afforded lake and river interests by the studies and recommendations of the Secretary of the Army, I do not hesitate to ask the committee's favorable report on H. R. 3300.

Mr. JONAS. Mr. Chairman, I would like to make this observation, as has already been emphasized and pointed out here, which is that this bill labeled 3300 bears my name as the introducer and is of the same language and has the same objective and the same effect as the last bill this committee reported out favorably a year ago before Congress adjourned.

The testimony of the Corps of Engineers I think was substantially the same as we have heard here now. I think what I have to say here would be embodied in my written statement, and I think it is more important that the committee hear the members and officers of the sanitary district and the men who are skilled and learned in this project from a scientific as well as a practical and business standpoint than to hear from me.

Everybody knows I am for this bill. I introduced it in collaboration with Congressman Sheehan and Mrs. Church, who are all interested in the bill. As a matter of fact, I think the committee knows that all of the Members of Congress in Cook County and the adjacent territories have all endorsed this bill. That includes the members of both parties. All the members of the Democratic Party of Illinois have subscribed to this bill. So there is really no objection to this bill.

I have another subcommittee of my own which I would like to go to. I would like to convene that committee and set it to work, and then come back here.

Mr. DONDERO. All right, Mr. Jonas.

Mr. STANLEY. Mr. Chairman, I want to make my statement clear. I said that personally I do not object to withdrawal of 2,500 feet, but I did not mean by that that Congress could authorize withdrawal of it. You cannot withdraw 1 foot of water from these Great Lakes and their connecting streams without the approval of the International Joint Commission under the terms of the treaty. But if the matter comes before us, as it is in a way under the present reference, why, I am inclined to welcome a larger withdrawal.

Mr. MACHROWICZ. I would like at this point in the record to introduce a statement of a member of our committee, Congressman John Kluczynski, who also introduced a bill in this matter and who was very helpful at the last session, and who was one of the authors of a similar bill. He was very active in having this committee interest itself in this matter.

Mr. DONDERO. Without objection, it will be received and made a part of the record.

The Chair also received a letter from the Honorable Thomas J. O'Brien, who represents the Democratic Members who have introduced similar bills. His letter to that effect in which he says they agree that Congressman Jonas' bill should be endorsed is also made a part of the record at this point.

(The statement of Congressman Kluczynski and the letter of Congressman O'Brien are as follows:)

STATEMENT OF REPRESENTATIVE JOHN C. KLUCZYNSKI, OF ILLINOIS

Mr. Chairman, I testify in behalf of my bill, H. R. 3212, the purpose of which is to authorize the State of Illinois, and the Sanitary District of Chicago, under the direction of the Secretary of the Army, to help control the lake level of Lake Michigan by delivering water therefrom into the Illinois Waterway. There are a number of other bils pending before the committee which are similar in purpose. It will be recalled that hearings were held by this committee last year on this subject and a bill (H. R. 8165) was favorably reported to the House. However, it was not acted on by the House because it was not reported until June 16, 1952, and Congress adjourned on July 7.

The Illinois River and connecting channels, including the Chicago drainage canal, constitute the Illinois Waterway which is under Federal improvement by the construction of locks and dams, supplemented by dredging, to provide a 9-foot channel between the Mississippi River and the head of the Federal project for lake-boat navigation on the Chicago River. The River and Harbor Act of July 3, 1930, authorized improvement of the Illinois Waterway and provided that the water authorized to be diverted by the decree of the Supreme Court "is hereby authorized to be used for the navigation of said waterway."

The 1930 act provided further that, as soon as practicable after completion of the waterway, the Secretary of the Army was to report to the Congress "the minimum amount of flow that will be required annually to meet the needs of such waterway and that will not substantially injure the existing navigation on the Great Lakes to the end that Congress may take such action as it may deem desirable."

House Document 184, 73d Congress, contains the report called for by the act of July 3, 1930, with these findings, among others:

"* * * aside from sanitary requirements, the minimum average flow from Lake Michigan required to meet the needs of a commercially useful waterway in the Illinois River is a direct diversion of 1,500 cubic feet per second in addition to domestic pumpage by the city of Chicago. It does not appear possible to arrive at a conclusive determination whether this flow will afford suitable sanitary conditions on the waterway after the sewage purification plants at Chicago have been completed and placed in operation."

That report was submitted to the Congress on December 7, 1933. Since that time, however, commerce on the Illinois Waterway has increased from 200,000 tons to over 16 million tons. The diversion since 1938 has remained at 1,500 cubic feet per second.

The Illinois Waterway is steadily increasing in importance. It connects the two most important waterway systems in the Nation, namely, the Great Lakes and the Mississippi River. An additional diversion of 1,000 cubic feet per second of water from Lake Michigan, in addition to the presently authorized 1,500 cubic feet per second, would provide a clean stream and improve navigation. It would result in a marked improvement in the Chicago sewerage system, and would lead to a drop in the level of Lake Michigan.

The Corps of Engineers recommends an increase in diversion of 1,000 cubic feet per second for a period of 3 years with the intent that a study be undertaken during that 3-year period which would produce further scientific knowledge of the problem and proposed remedies. My bill carries out that recommendation.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., June 30, 1953.

Mr. ROBERT F. MCCONNELL,
Chief Clerk, Committee on Public Works,
House of Representatives, Washington, D. C.

DEAR MR. MCCONNELL: The Democratic Members of Congress from Illinois held a meeting, at which I was present, and unanimously endorsed the bill introduced by Congressman Edgar A. Jonas, H. R. 3300, for the diversion of water from Lake Michigan into the Illinois Waterway.

With every good wish, I remain,
Sincerely yours,

THOMAS J. O'BRIEN,
Member of Congress.

Mr. DONDERO. Colonel Milne, if you will remain for a little while, the committee may have some questions.

Congressman Watts, of Kentucky, has a question or two he omitted to ask.

Colonel MILNE. Yes, sir.

Mr. WATTS. Colonel, what I wanted to ask you is this: In studying the height of the water in the lakes, does it run in cycles of high, low, and high? Has that been the history of it?

Colonel MILNE. That has been the history of it, Congressman. We have never been able to determine a fixed yearly cycle. Some people will say it is a 7-year cycle but actually we have not been able to prove that. All we do know is it runs in cycles of high and low.

Mr. WATTS. The question I wanted to get to is this; If we pass this bill that provides for a 3-year study, will you make that study during the high and low cycles, or will the 3 years give you a picture of it, including both the high and low cycles?

Colonel MILNE. This bill requires the report to be made to Congress by January 31, 1956. We could determine with a considerable amount of accuracy what effect in lowering this additional 1,000 second-feet would have, and then by study we could apply that to a low cycle.

Mr. WATTS. I see. That was my only question.

Mr. DONDERO. A very good point. Thank you very much, Colonel Milne.

Is Anthony A. Olis, president of the Sanitary District of Chicago, present?

Mr. ANGELL. Mr. Chairman, I note Mrs. Church and colleagues of ours are here. Might it not be proper to have them recognized at this time so that they will appear in the record?

Mr. DONDERO. The Chair will be glad to do it.

Mrs. Church is here, and Congressman Sheehan is here. We understand you have similar bills before the committee and your presence here will be noted in the record.

STATEMENT OF HON. MARGUERITE STITT CHURCH, MEMBER OF CONGRESS FROM THE 13TH CONGRESSIONAL DISTRICT OF ILLINOIS

Mrs. CHURCH. Mr. Chairman, I would like to make a very brief statement at some appropriate time, if I may.

Mr. DONDERO. How long will it take you, Mrs. Church?

Mrs. CHURCH. A minute and a half.

Mr. DONDERO. Would you yield to the lady from Illinois?

Mr. OLIS. Gladly, sir.

Mr. DONDERO. Mrs. Church, we will hear you now.

Mrs. CHURCH. Mr. Chairman and members of the committee, I appear here today as the author of H. R. 3196, which is the bill identical to that introduced by Congressman Jonas. I think you have heard that all of us who introduced similar bills agreed to support Representative Jonas' bill in preference to our own. I appear in that capacity today.

I merely wish to call attention to the fact that this is not a new problem, but an old one, and it represents an increasing danger to the residents of the North Shore. The 13th District, which is my district, runs along the shoreline north of the city of Chicago to Wisconsin.

It has suffered a disastrous loss of property because of the increased height of the waters of Lake Michigan. I am not unrealistic enough to think that any additional increase of 1,000 or 2,000 feet would necessarily mean that you could satisfactorily combat nature. I think that increased diversion, however, would be a good step. We have been told that it would help purify the stream, which would be of great benefit to all of us who use Chicago water.

I hope that the committee will grant this temporary relief, knowing that we share completley the conviction of the Army engineers and of the International Joint Commission, before whose august Chairman I had the privilege of appearing to testify last year, that some more definite plan must be made and put into effect.

Briefly, I would like to add one more word. I myself entered 29 small moorings on Lake Michigan last summer, and if anyone is questioning how high the water is I would like to say in the case of 27 of them the tops of the piers in August of last year were 1 to 3 feet under the water, so that it was impossible even when seeking refuge to tie up to the ordinary piers.

I thank the gentlemen for this opportunity to appear, and I certainly hope that this year the committees of the House and the Senate will take proper action to grant this relief.

I am sorry to have to speak and run, Mr. Chairman, but I have another committee at which I am presenting another resolution.

Mr. DONDERO. The committee will understand.

Mr. Sheehan, are you willing to defer any statement you will make, or would your prefer to make your statement now?

Mr. SHEEHAN. I will wait until Mr. Olis is done, Mr. Chairman.

STATEMENT OF ANTHONY A. OLIS, PRESIDENT OF THE SANITARY DISTRICT OF CHICAGO

Mr. OLIS. Mr. Chairman and members of the committee, I want to thank you for the opportunity to appear today and give you the views of the Sanitary District of Chicago with reference to this legislation to increase the diversion from the present 1,500 cubic feet per second to an additional 1,000 cubic feet per second at Chicago.

I testified before this committee in the last Congress and I would like to introduce, if the committee has no objection to it, the statement I made at that time, in order to shorten the statement that I might make here orally. I have a copy of the statement here, and if the committee agrees I would like to introduce that statement.

Mr. DONDERO. Without objection, it will be received for the record.

(The statement of Mr. Olis made on May 28, 1952, before the Committee on Public Works, House of Representatives, is as follows:)

STATEMENT OF ANTHONY A. OLIS, PRESIDENT, THE SANITARY DISTRICT OF CHICAGO, BEFORE THE COMMITTEE ON PUBLIC WORKS, HOUSE OF REPRESENTATIVES (82D CONG., 2D SESS.), MAY 28, 1952 (H. R. 8165: FORMERLY H. R. 6098 AND H. R. 6100)

Mr. OLIS. Thank you, Mr. Chairman and members of the committee.

I first want to thank you for the opportunity to appear before you and give you our views and also answer some of the charges that were made against this legislation, particularly against the sanitary district yesterday. I would like to divide my statement into three parts.

First of all I would like to give the committee a little of the highlights of the background of this situation. Secondly, I would like to refer to some of the

arguments that have been made in opposition to the legislation. Thirdly, I would like to say why at this time this legislation is timely and why it should be enacted at this time.

The city of Chicago had its beginnings around the Chicago River. The primitive sewer system in Chicago way back in the early 1850's and thereafter drained into the Chicago River, and the Chicago River flowed into Lake Michigan. The residents of Chicago believed they could protect the water supply of Lake Michigan by building a series of cribs out 3 or 4 miles away from the shoreline. However, in 1885 we had a flash rainstorm in Chicago during the summer. It seemed that the skies just opened up and the water came down like out of a bucket, and Chicago was flooded. All of this water spilled into the Chicago River. As a result it churned up the sludge which was gathered at the bottom of the river and washed it out into the lake. It washed it so far out into the lake that it got into the cribs. As a result of that Chicago had one of the worst typhoid epidemics ever experienced in its history. Thousands of people died during that summer as a result of this epidemic.

That is the reason why the people of Chicago became disturbed and aroused and said that something must be done in Chicago to take care of the sewage situation.

As a result a body of expert engineers was appointed. They came to a conclusion which was not a political conclusion. It was based totally on the technical knowledge and advice of these various engineers that the best way to take care of the needs of disposal of Chicago's sewage was to build this canal which would cut through the Continental Divide, which was about 10 miles west of Chicago, and connect up the Chicago River with the Des Plaines River and the Illinois River. By cutting through the Continental Divide they would reverse the flow of the Chicago River, so that instead of having the sewage flow into the river, and then into the lake where we were taking our drinking water, it would flow in the opposite direction and go down the Illinois River and the Mississippi River, and thence down to the Gulf of Mexico.

The original thought was that it would be effective by the treatment of the sewage simply to take 10,000 cubic feet of fresh water from Lake Michigan and have it flow down the canal. By the introduction of this 10,000 cubic feet of fresh water by the time the sewage and the water got down to the cities along the lower Illinois River nature would have taken its course and no offense would be felt by the people down-State.

As a matter of fact, the engineers did not contemplate that the city would grow as fast as it did grow and that as much industry would settle in Chicago as we finally found in that big city.

At the same time in the early 1920's there was a lowering of the lake levels. This lowering of the lake levels was seized upon by the Great Lakes shippers and lake carriers who thought that the lowering of the lake level was due to the fact that the sanitary district was taking 10,000 cubic feet per second out of Lake Michigan.

Mind you, the canal was opened up for operation in January 1900. Flows up to 10,000 cubic feet per second were being taken out of Lake Michigan from January of 1900 until the Supreme Court decree was finally entered in 1930. So for a period of 30 years a flow up to 10,000 cubic feet per second was being taken out of Lake Michigan.

As I say, in the early 1920's the lake levels were going down. We now know that those lake levels go down and up over a cycle of about 23 years between one high level and another high level. This lake diversion of even 10,000 cubic feet per second would not materially affect that cycle. However, at that time the Lake States who instituted this suit in the Supreme Court against the State of Illinois were able to convince the Court that this 10,000 cubic feet per second was really the cause of the lowering of the lake levels.

In fact, the statement has been made by these traditional opponents of lake diversion, and all of the people that are here opposing this lake-diversion legislation are the traditional opponents. You find them opposed to this matter for the last 30 years. It has gotten so that it is a habit for anyone who opposed it in the past to oppose it at the present time, even though conditions at the present time are a lot different than they were at the time when the opposition was first made in the Supreme Court case.

The Supreme Court being convinced that these low lake levels were due to this 10,000 cubic foot diversion, entered an order upon the sanitary district to do two things.

In the first place, the sanitary district was enjoined from taking this 10,000 cubic feet per second out of the lake, and a reduction was made progressively to reduce the diversion over the period of 9 years, until in the year 1938 or 1939 it should be reduced down to 1,500 cubic feet per second.

In the meantime the State of Illinois and the Sanitary district of Chicago were ordered to build treatment plants to treat the sewage. In the meantime, since that order has been entered, the sewage treatment plants have been built and at the present date the sanitary district treats all of the sewage of the city of Chicago. It includes not only the sewage of the city of Chicago, but includes 74 suburbs within the county of Cook. It includes 470 or 480 square miles in the county of Cook.

That sewage is being treated to the extent of 92.5 percent, which is in engineering circles supposed to be the most efficient and the highest amount of treatment that can be given to sewage anywhere in the world. We have one of the largest sewage-treatment plants in the entire world. Everyone, not only from other parts of the United States, but from all over the world, comes to Chicago for the purpose of inspecting our works; for the purpose of seeing how we are treating this volume of sewage. There are over 1,100 million gallons of sewage treated every day in the sanitary district.

Of course, the opposition to this legislation is based upon a situation that existed way back in the 1920's, when there were no sewage-treatment plants. It is based upon the conception that we are asking for additional diversion for the purpose of diluting our sewage, and for the purpose of treating our sewage, and for the purpose of doing the same things that were being done in 1921.

As a matter of fact, the situation, as I say, is different today. The sewage plants are completed. All of the sewage of the Sanitary District of Chicago is being given the fullest treatment that is possible under the present technical engineering knowledge that exists today. The water that is required for a decent and clean waterway in the Illinois River is required not for the purpose of treating the sewage, but it is required because the effluent which goes into the canal lacks dissolved oxygen. That effluent also contains an excess of nitrogen, which is imposible to extract by any means of treatment of sewage. The only way to add dissolved oxygen to this effluent in the canal and the only way to dilute this excess nitrogen is by introducing fresh water.

Why do we need dissolved oxygen? We need such oxygen in the water for the purpose of giving sufficient oxygen for fish life and for making a clean stream. Both the Water Resources Board of the State of Illinois and the United States Bureau of Public Health have said that at least four parts per million of dissolved oxygen are necessary in water in order to have a clean stream. The reason why we would like to dilute the nitrogen is because an excess of nitrogen in the canal gives rise to the growth of plantlife in the bed of the canal which will hinder navigation and also hinder the flow of the stream.

Now I would like to answer some of these arguments that have been made against this legislation. In the first place, the old argument was that lake diversion was the cause of lowering lake levels. Today the same people who 20 years ago said that this diversion was the cause of these low lake levels are here today to tell you that diversion will not lower lake levels in this high state of lake levels. They say it will not lower them to any marked degree. Well, they were either wrong then or they are wrong now. The fact is that at least this high-lake-level situation has proved that the traditional argument of these opponents was wrong back 20 years ago. Everyone now has to agree that this diversion will not materially alter lake levels. Especially this 2,000 additional cubic feet per second will only alter the lake levels, as everyone here admits, by an inch and a quarter to an inch and an eighth over a period of years. That is now the admitted answer to the traditional argument against lake diversion.

Secondly, the argument has been made here that this lake diversion of 2,000 additional cubic feet per second will endanger the people downstate because of the fact that it will increase the flood hazards downstate. As a matter of fact, the engineers will tell you, and those people who know about flood stages downstate will say, that at no time has downstate suffered a flood by reason of any diversion or by reason of any flood situation which started in Chicago. The most that we have sent downstate through this lake diversion was 10,000 cubic feet per second, which was being sent down, as I say, during a period of 30 years, from January 1, 1900, to 1930.

Down at Beardstown when they did have a flood they had 115,000 cubic feet per second going down the Illinois River. That came not from Chicago, but

it came from the Sangamon River and from the other rivers that enter into the Illinois River. That had nothing to do at all with the diversion at Chicago. Why? Because when we have any situation of a flood at Chicago, when we have a heavy rainstorm, we cut off the diversion entirely. In other words, that diversion, whatever it may be, whether it is 1,500 cubic feet per second or whether it is 3,500 cubic feet per second, or whether it is 10,000 cubic feet per second, is an annual average diversion and is not a steady diversion. It is controlled by the Army engineers, who suggest a certain amount of diversion in 1 month of the year, and another amount of diversion in another month of the year. In other words, during the dry seasons and during the summertime when it is particularly necessary to get more dissolved oxygen into that stream that is when more diversion goes down there. That is when there is no risk or hazard of any floods downstate.

Therefore, this argument that additional diversion will cause floods downstate is pure bugaboo. It is unadulterated poppycock. There is no such thing as a hazard to downstate because of this diversion. Especially will there be no hazard if the diversion is an additional 2,000 cubic feet per second, because if there were no hazard when it was 10,000 cubic feet per second certainly there is none now.

Downstate is also making the argument that what we want to do is to wash our sewage down there. That is the furthest thing from the truth because, as I say, at the present time our sewage is being fully treated. So far as the treatment process is concerned in the city of Chicago, it is complete. It is the best that engineering brains can give any community in the world. So far as washing the sewage down there is concerned, we are not washing any sewage down there, but simply trying to get a little more fresh water into that canal for the purpose, as I said, of giving that water four parts per million of dissolved oxygen and to reduce the nitrogen. If we did that downstate would have a cleaner stream and more healthful stream than it has at the present time.

In the old days the argument used to be made also, and I suppose it will be made here before this hearing is over, so I might as well answer it before it is made, that what we want this additional diversion for is for power purposes.

It is true there is a generating plant at Lockport. It is true whatever diversion comes down there goes through our generating plant, and that we do manufacture or generate some electricity there. However, it is also true that in the meantime, since 1950, the sanitary district has ceased its program of selling electricity. In the old days it was thought that because of this 10,000 cubic feet per second of diversion that was coming down that that ought to be used for the purpose of generating power which might be sufficient to supply the entire area, or at least a part of it, with electrical power. In the old days the sanitary district had not only private customers who bought electricity from them, but the city of Chicago and the park district of Chicago used to buy electricity from the sanitary district. Since the diversion has been cut down and since the treatment plants have been completed, we have changed our policy and we now do not sell any electricity to anyone. We do not even have sufficient electricity to operate the plants of the sanitary district. Therefore, this additional diversion is not being asked for the purpose of power generation because we have discontinued all of the sales. We have cut out all of the cables that had been built, and we now do not sell any electricity to any private or public institutions. That is the answer to the electrical-power situation.

The traditional opponents who have appeared here would lead this committee to belieev that this is just another of a series of attempts to get in some illegitimate way, or some illegal way, or some circuitous way, this additional diversion that is improper and is in violation of the Supreme Court decree.

I want to bring out to this committee the fact that at this time when the treatment plans have been completed and our engineers will be able to show to this committee that during the year 1951 we have given complete treatment to the highest extent possible to all of the sewage in the sanitary district, and that that has gone on for the entire year of 1951, and that the same situation exists up to almost the middle of 1952.

The Congress, July 3, 1930, in appropriating $7,500,000 to provide for the completion of construction of the Illinois Waterway, in the River and Harbor Act of 1930, further provided:

"Illinois River, Illinois, in accordance with the report of the Chief of Engineers, submitted in Senate Document Numbered 126, Seventy-first Congress, second session, and subject to the conditions set forth in his report in said document, but the said project shall be so constructed as to require the smallest flow of water with which said project can be practically accomplished, in the develop-

ment of a commercially useful waterway: *Provided*, That there is hereby authorized to be appropriated for this project a sum not to exceed $7,500,000: *Provided further*, That the water authorized at Lockport, Illinois, by the decree of the Supreme Court of the United States, rendered April 21, 1930, and reported in volume 281, United States Reports, in Cases Numbered 7, 11, and 12, original—October term, 1929, of Wisconsin and others against Illinois, and others, and Michigan against Illinois and others, and New York against Illinois and other, according to the opinion of the Court in the cases reported as Wisconsin against Illinois, in Volume 281, United States, page 179, is hereby authorized to be used for the navigation of said waterway: *Provided further*, That as soon as practicable after the Illinois waterway shall have been completed in accordance with this Act, the Secretary of War shall cause a study of the amount of water that will be required as an annual average flow to meet the needs of a commercially useful waterway as defined in said Senate document, and shall, on or before January 31, 1938, report to the Congress the results of such study with his recommendations as to the minimum amount of such flow that will be required annually to meet the needs of such waterway and that will not substantially injure the existing navigation on the Great Lakes to the end that Congress may take such action as it may deem advisable."

Col. Daniel I. Sultan, in making his report on the above study to the Chief of Army Engineers in 1930, pursuant to the above provision of the 1930 River and Harbor Act, stated:

"The determination by the Supreme Court of the amount of water to be diverted at Lockport was based upon the requirements of navigation in the port of Chicago and connecting channels. There is no difference between the requirements of navigation on the Illinois River and Waterway and those of navigation in the port of Chicago. Conditions of health, safety, and efficiency should be satisfactory for all. A reasonable standard of healthful and decent living conditions for those aboard ships and working at terminals on shore must be maintained. Injury to navigation may occur if putrefaction in the water results in nauseous or disgusting conditions. Such a condition may be caused by putrefaction of the effluent from the sewage-treatment plants, putrefaction of raw sewage contained in storm-water runoff, and putrefaction from accumulated sludge deposits. The weight of expert testimony is to the effect that the effluent from the proposed activated sludge-treatment plants will be inoffensive, but the sanitary district program of treatment is upon such an unprecedented scale that such predictions must contain some element of uncertainty. No reliable process of calculation can predict the effect of raw sewage in storm-water runoff and of accumulated sludge deposits. After intensive and prolonged study, based upon the testimony of a number of eminent sanitary engineers, Special Master Hughes reached the conclusion that these matters were indeterminate, and that provision should be made for further examination, after the sewage-treatment plants have been completed, and the effect of the effluent therefrom with the storm-water flow on the navigable channels has been observed, to the end that the question of any further or other relief may have appropriate consideration in the light of actual conditions."

In other words, what I want to get across to this committee is that the present legislation or the present bills are not in violation of or in contradiction of the Supreme Court decree. They are pursuant to the decree; they were envisioned in the decree. In fact, one paragraph of the Hughes report preceding the decree said, and I am reading from that report now:

"(9) That after the installation of controlling works as above provided, and on the completion of all the sewage-treatment works above described, and in the absence of competent action by Congress in relation to navigation lawfully imposing a different requirement, the diversion by the sanitary district of water from Lake Michigan should not exceed an annual average of 1,500 cubic feet per second in addition to domestic pumpage."

In other words, the Hughes report included the words that the 1,500 cubic feet per second should be only in the absence of competent action by Congress in relation to navigation lawfully imposing a different requirement. Master Hughes' report said that, when the sewage-treatment plants were completed and a sufficient time had transpired, they then only could arrive at the amount of actual diversion that was necessary to maintain the indirect needs of navigation. It is agreed at the time the Supreme Court order was entered that 1,500 cubic feet was sufficient to sustain flotation. It was sufficient for lockage, leakage, seepage, and evaporation. But no one knew at that time what would be necessary to maintain a clean stream in the Illinois Valley.

Now, 4 years ago the Governor of the State of Illinois appointed a lake-diversion committee. On that committee was a gentleman who is here now, Mr. Albert Meserow, who was secretary of the committee. One of the other members was the commissioner of public works of Chicago. A third member was the sanitary engineer of the State of Illinois—not of the sanitary district. I was on that committee. A fifth member was a member who came from the city of Peoria.

That committee held hearings. That committee made studies for the purpose of trying to determine what the situation required after these treatment plants had been completed. It was the study that the State water resources board made, and I am talking about the Illinois State Water Resources Board. It was based upon that study and upon that recommendation that the thought of an additional 2,000 cubic feet per second was derived. That figure was not taken out of the air. That was a figure that came from the engineers of the State water resources board who over a period of years had examined the situation and had come to the conclusion that the amount of water that was necessary to have a clean stream to afford 4 parts of dissolved oxygen per million in that stream would be 2,000 cubic feet per second additional to what was being taken out of Lake Michigan.

That is the reason why we are supporting the legislation for an additional 2,000 cubic feet per second.

Mr. VURSELL. Mr. Chairman, I want to compliment Mr. Olis on the very lucid and clear explanation of the whole problem. I do not know when we have had a witness before this committee who has presented or made a problem like this as clear as he has, with such clarity of thought, and who has anticipated some of the opposition, and who has answered some of the questions of some of the opposition who were here yesterday morning.

There was one point you did not bring out, Mr. Olis. After that Supreme Court decree the Sanitary District of Chicago spent something like $300 million to build the greatest and most up-to-date disposal plants that engineering minds have been able to develop, to the extent where you have almost completely purified the water, which very largely answers the question of one of the witnesses who was in opposition yesterday and who said that Chicago was trying to float their sludge and impurities of water down through the Illinois River. He told about the fish life that used to be in the river and said that it was coming back now. He admitted under my questioning that due to the greater purification, and so forth, that the fish life was coming back.

There was one spot in the testimony that it was brought out that due to the slow flow of water it was not quite as pure yet as it should be. I think it was from Utica north. I think your answers on that with the oxygen and nitrogen purification and the movement of the water with a little more or a larger diversion, I think cleared that up.

Summing up your testimony, as I understand it, it is that you have complied, that is, the Sanitary District of Chicago has complied with the suggestions laid down in the report of Master Hughes. Having complied with that you are in a position not only to relieve a very small amount of this pressure that is bothering us in the lakes now by diversion—because the lake levels are so high now—but you are also in a position now to relieve any objections that were had at that time as to navigation and purification of the water, and so forth. Also, you can help give the people downstate a clean stream.

Mr. OLIS. That is right.

Mr. VURSELL. Your argument impresses me very much.

Mr. OLIS. Thank you.

There is one other point I forgot to bring out. That is, some objection has been made by navigation interests that this additional 2,000 cubic feet per second would increase the current and therefore make it difficult for barges to travel upstream. The State water resources board also covers that situation. The report indicates that only in one portion of that canal, which is not over a mile in length, will the current be increased appreciably. In that portion it will be increased only by 0.45 of a mile. In other words, less than a half a mile per hour increase in the current will be had. Therefore, that should not be any particular disadvantage to navigation interest, in view of the fact that the current now is less than 1 mile per hour in that stream, and the current in the Mississippi River in some places is 4 miles per hour, and those very same barge interests are using the Mississippi River without very much difficulty.

Mr. DONDERO. Mr. Chairman, I want to confirm what my colleague from Illinois said about the clarity of the gentleman's presentation of the case.

Mr. OLIS. I believe most of the members of the committee know the history of the sanitary district situation and the history of lake diversion at Chicago. Of course, originally the Chicago River ran into Lake Michigan and Chicago sewage ran into the Chicago River, and thence into Lake Michigan. The people of Chicago thought way back in the 1850's and 1860's, when Chicago first began to grow around the Chicago River, that the drinking water of Chicago, which was being taken from Lake Michigan, could be kept sufficiently pure by staking out the cribs through which the drinking water was taken, at least 3 or 4 miles away from the shoreline.

Mr. DONDERO. Where do you get your water now?

Mr. OLIS. From Lake Michigan, and from these cribs which are out 3 or 4 miles away from the shoreline. But in 1885 we had one of those flash-flood rainstorms at Chicago and the water came down out of the skies like out of a bucket and spilled into the Chicago River with such violence that it churned up the sludge at the bottom of the river and at the bottom of the lake near the shoreline and washed it far out into the lake. It finally got into the cribs and into the drinking supply of the Chicago water system. As a result of it Chicago suffered one of the most severe typhoid epidemics it had in its history. Thousands of people died during the summer of 1885.

The people became aroused to the fact that something must be done with the sewage problem in Chicago. It could not continue to grow as an industrial city on the shores of a fresh-water lake which it took its drinking supply from unless something was done to solve the contamination of that water, and to keep the water from being contaminated.

So the city council met in an emergency meeting and decided that the best engineering brains should be summoned to Chicago for the purpose of studying that problem. These engineers met and they finally decided in view of the fact that Chicago was in a unique position—it was an industrial city on a body of fresh water; it was an industrial city that was apparently going to continue to grow in size; it was a city in which industrial waste was going to continue to increase—that the only way to protect Chicago's water supply, and the only way to protect Lake Michigan from being contaminated, was to reverse the flow of the Chicago River and to build a canal through the divide, which is about 10 miles west of Chicago, and have the river run the other way and empty into the Illinois and thence into the Mississippi River, and finally have the sewage get down into the Gulf of Mexico.

Chicago is further in a unique position because it is at the bottom of Lake Michigan. It is at a bend in Lake Michigan where there is practically no flow of the lake waters. In this respect it is unlike Milwaukee, and unlike Detroit, and unlike Cleveland, because all of those cities are at places in the Great Lakes where there is some movement.

Mr. DONDERO. That is the only way that Chicago is at the bottom, however.

Mr. OLIS. It all depends on what you mean by the bottom. But it is at a point in Lake Michigan where there is less current than there is at all of those other cities. Therefore any effluent that might be put into Lake Michigan at Chicago, no matter how well treated that effluent was, would still have a much more considerable influence on

the contamination of the lake water than it would at Milwaukee, or Detroit, or Cleveland.

Therefore, this canal was projected as means of solving that sewage problem. This was way back in 1890, when the project was first born. The original thought was it would be sufficient in the way of sewage treatment that once this canal was built, if 10,000 cubic feet of fresh water could be taken from Lake Michigan and diverted into the canal, that would be a sufficient dilution of the sewage so that by the time the effluent and this lake diversion reached the lower parts of the Illinois River that no offense would be felt by the people downstate.

Mr. DONDERO. May I ask you there, in the interest of saving time, whether or not you did change the course of the river and whether it now flows south instead of flowing north?

Mr. OLIS. It now flows out of Lake Michigan instead of flowing into Lake Michigan.

Mr. DONDERO. And since the Supreme Court decision Chicago has built reduction works or purifying works for its sewage?

Mr. OLIS. That is right.

Mr. DONDERO. And your outlet is down this river?

Mr. OLIS. That is right.

Mr. DONDERO. It is the claim of Chicago that the water you now get under the Supreme Court decision amounting to 1,500 cubic feet per second, is not sufficient to purify that discharge, and you want more water. Is that correct?

Mr. OLIS. That is correct, excepting that I would not say it is for the purpose of purifying the effluent. It is rather for the purpose of adding oxygen to the effluent in order to——

Mr. DONDERO. That is done through the remedial works which you have already established?

Mr. OLIS. That would be done, Mr. Chairman, by the additional 1,000 or 2,000 cubic feet of fresh water which would be introduced into the canal.

Mr. DONDERO. Is the question of public health involved here?

Mr. OLIS. The question of public interest is involved in having a decent and clean waterway down the State.

Mr. ANGELL. May I ask the witness how many cubic feet a second go into the river aside from the diversion?

Mr. OLIS. Aside from the diversion?

Mr. ANGELL. Yes.

Mr. OLIS. What is the domestic pumpage, do you know?

Mr. RAMEY. About 1,600 second-feet.

Mr. OLIS. It is about 1,600 second-feet in addition to the 1,500 cubic feet of diversion. The canal was opened up and it was opened with the theory that dilution would take care of the problem of sewage treatment. The engineers at that time did not visualize the city of Chicago was going to grow as rapidly as it did grow, and by the year 1920 there was more sewage going into the canal than had been contemplated by the engineers, and there was a bad effect being felt downstate in the cities of Peoria and Beardstown. In the meantime Beardstown experienced a severe flood. So the combination of those two circumstances of the flood situation down at Beardstown and the fact that they were getting a polluted stream downstate, led to con-

siderable opposition downstate to this diversion of 10,000 cubic feet per second.

At the same time, the lake levels were being lowered by the natural cycle. In the 1920's we were in a period of low lake levels in the Great Lakes. The shipping interests were complaining about the fact that the lakes were low, and they seized upon this Chicago diversion of 10,000 cubic feet per second as being the cause of their difficulties.

So they induced a number of Lake States to begin this suit in the Supreme Court, and the suit was begun, and a considerable amount of litigation was carried on. Finally, in the year 1930 the Supreme Court decree was entered restricting the flow of diversion and cutting it down from 10,000 cubic feet in progressive stages until it should be reduced to 1,500 cubic feet per second in the year 1939.

Mr. MACHROWICZ. Mr. Chairman.

Mr. DONDERO. Mr. Machrowicz.

Mr. MACHROWICZ. One of the States interested in that suit was the State of Ohio, was it not?

Mr. OLIS. That is right. The State of Ohio is the center of the shipping industry.

Mr. MACHROWICZ. There was quite a bit of opposition in the State of Ohio because of the effect on Lake Erie for some time.

Mr. OLIS. That is right.

Mr. MACHROWICZ. What is the position now of the State of Ohio so far as you know?

Mr. OLIS. I do not know what the State of Ohio's position now is, but for the most part I know that those people who have been opposed to additional diversion in the past still remain opposed to it, in spite of the fact that conditions, as I want to point out in my statement, have changed now from those that existed at the time that the original opposition took place.

Mr. MACHROWICZ. The Board of Commerce of Cleveland, Ohio, is now favoring the increased diversion, is it not, Mr. Olis?

Mr. OLIS. Are they? I understand that one of the leading newspapers in Cleveland is now for this increased diversion, whereas in the past it was traditionally opposed to it.

Mr. DONDERO. We have had some communications from downriver, Mr. Olis, in the last 2 or 3 days, in opposition to the position taken by Chicago. That is downriver in Illinois.

Mr. OLIS. I also wanted to bring out that this position we are taking here on behalf of the Sanitary District of Chicago is not Chicago's position alone. The sanitary district includes not only Chicago, but includes 74 suburbs adjoining Chicago. It includes an area of 480 acres, so that we in the sanitary district are not a part of the city of Chicago government; we are an independent governmental agency set up by statute and represent this large territory of Cook County, which includes all of those suburbs.

Mr. DONDERO. Is there any objection because of odor down the river? Is there any objection on the part of the people down there because of the odor from the water coming from the discharge?

Mr. OLIS. At the present time?

Mr. DONDERO. Yes.

Mr. OLIS. I think there is some little nuisance in the way of objection from the odor, but that is now a minor thing compared to what

it used to be 20 to 25 years ago, on account of the fact that the effluent which is now going into the canal is a treated effluent rather than raw sewage going into the canal as it was originally.

Mr. DONDERO. Do you think the increased diversion of the water you are asking for from this committee would solve that problem?

Mr. OLIS. Yes, it would.

Mr. DONDERO. And that is why you are here?

Mr. OLIS. Yes.

Mr. DONDERO. Then the question of public health is involved in this matter?

Mr. OLIS. I do not know that anybody ever got sick from odors, or that anybody ever incurred a disease from odors from sewage. In fact, some people thrive on it. They say sewage contains vitamin B_{12} and other growth-promoting elements. We have an experiment down at the University of Illinois in which a part of this sewage has been introduced into animal feed. Pigs and chickens thrive on it much better than they do on an animal food, which does not contain this element. So I don't know that there is any particular health hazard by reason of a polluted water stream, excepting that you do destroy fish life when you have a polluted water stream and you have a dirty and polluted waterway which is not conducive to what we think should be a decent and clean waterway. I believe that the people downstate should have and it is in the public interest that the Illinois Waterway should be a clean waterway. I believe we can give them a clean waterway if we could only permit the study to be made that is suggested here in this legislation.

Mr. DONDERO. Governor Dempsey just called my attention to the fact that you misspoke yourself when you said the Sanitary District of Chicago included 480 acres. Do you mean 480,000?

Mr. OLIS. That is 480 square miles. I am sorry.

Mr. MACHROWICZ. Do I understand correctly that the Mississippi Valley Association endorses this legislation?

Mr. OLIS. That is correct.

Mr. MCGREGOR. The Mississippi Valley Association? Is that the group that has its headquarters at Cincinnati, Ohio?

Mr. OLIS. At St. Louis.

Mr. MCGREGOR. I would like to get back to the Ohio situation.

I understood you to say that the Cleveland people are now favoring the legislation?

Mr. OLIS. I said one of the newspapers—I don't know which one it is—but I have been told one of the Cleveland newspapers which was traditionally opposed to Lake diversion is now for it.

Mr. MCGREGOR. If you are going to make that statement I think you should have something to insert in the record to justify it. At least you made the implication that a paper is for it, and I hope you will check and insert the article in the hearings.

Mr. OLIS. I will be happy to get the editorials from it and furnish it to the committee.

Mr. MCGREGOR. As you recall, last year the attorney general of Ohio, the Honorable William O'Neill, appeared before this committee in opposition to it. Do you know how he stands at this time?

Mr. OLIS. I do not know. I would assume that they are still opposed to it. I am not sure.

Mr. MCGREGOR. That is all, Mr. Chairman.

Mr. DONDERO. I have one question.

What is the population in the Sanitary District of Chicago?

Mr. OLIS. The population is about 5 million, and the industrial wastes of the sanitary district are equivalent to another 3 million, so that there is a waste problem of the equivalent of 8 million people in a city that is bordering on a fresh body of water from which it takes its drinking supply.

Mr. BECKER. Mr. Chairman.

Mr. DONDERO. Mr. Becker.

Mr. BECKER. I do not know the type of disposal plants that you have at Chicago in the sanitary district, but would not the building of new and very modern disposal plants eliminate any question of pollution?

Mr. OLIS. We have what the sanitary-engineering profession considers to be the very finest and the very best in the way of sewage-treatment plants. Engineers not only come from all over the country to inspect those plants for the purpose of getting ideas on building them in other cities, but we have engineers from all over the world coming in to inspect them. We are doing a most efficient job. We are taking 92.5 percent of the solids out of the sewage before the effluent goes into the canal. That is considered to be the most efficient sewage-treatment process that engineering science can give to sewage-treatment business.

Mr. BECKER. The question of pollution should be very, very small then, I mean, so as not to cause any difficulty should it not?

Mr. OLIS. The only trouble with the situation is that there are the wastes of an equivalent number to 8 million people that are going into the plants. We are treating over 1,100 million gallons of sewage a day. When you take 92.5 percent of the solids out of the sewage those that are left cannot be taken out because they are microscopic solids, but nevertheless there are 7.5 percent left in that effluent.

When you multiply that 7.5 percent by 8 million people you still get an effluent which is not one that can be esaily digested without new fresh water being introduced.

That effluent contains no oxygen. We had a governor's committee in Illinois study the question of what amount of oxygen will be necessary for the purpose of sustaining fish life. After a study was made by the State water resources board—not by the sanitary district, but by the Illinois State Water Resources Board—it came to the conclusion that 4 parts per million was necessary in the way of oxygen in water in order to sustain fish life. The conclusion was that in order to attain that much oxygen in this canal that we would need an additional 2,000 cubic feet per second.

The Army engineers here recommended 1,000 cubic feet for the purpose of the study and we are agreeable to having that study made on that basis. We believe that ultimately, after they have made the study, they will agree that 2,000 cubic feet per second are necessary. Not only is it necessary for the purpose of introducing new oxygen into the canal, but it is also necessary for the purpose of reducing the nitrogen in the effluent.

There is an excess of nitrogen in the canal and the excess of nitrogen promotes the growth of plant life at the bottom of the river. That slows down the movement of the river. It does not promote a clean waterway. For the purpose of diluting that amount of nitrogen again fresh water is necessary.

For those two reasons we think that the introduction of fresh water into the canal will help to solve the condition of that waterway.

I would just like to touch for one moment on the main objections that have been made in the past to water diversion. One of them, of course, is the objection that the shipping interests make to diversion, which is that it will lower the lake levels. Everyone agrees that lake levels lower and rise in accordance with a cycle, which runs from 7 to 21 years apart. Those lake levels rise and fall to the extent of 6 or 7 feet. In other words, when they are at a high level they may be 6 feet higher than they are when they are at a low level.

Everyone agrees here that the amount of lake diversion we are requesting—this 1,000 cubic feet per second of additional lake diversion—would lower Lake Michigan only to the extent of eight-tenths of an inch. So when we talk about lake diversion and lowering lake levels we know that we would lower the lake only eight-tenths of an inch, when nature in its cycles lowers and raises these lake levels to the extent of a difference of 6 feet, and it seems to us that the amount of diversion or, rather, the amount of the lowering of the lake levels would certainly not be a substantial or a significant lowering of the lake levels, which would harm any of the shipping interests.

Mr. ANGELL. Mr. Chairman, may I ask a question there?

Mr. DONDERO. Mr. Angell.

Mr. ANGELL. It would, however, in extremely low water, according to the report just given us, make a very decided difference in the amount of tonnage that can be carried on ships on the lake.

Mr. OLIS. It all depends on how you compare that decided difference. As I say, if nature lowers the lake level 6 feet——

Mr. ANGELL. You are improving on nature. When the lake gets down to the very lowest stage then if you lower it an additional inch or two, you may interfere materially with shipping; is that not true?

Mr. OLIS. That may be true, but on the other hand, even the Supreme Court said in its decree that lake diversion would not substantially lower the lake levels. My point is that the amount of diversion we are requesting here would not substantially or significantly lower lake levels.

Mr. ANGELL. Except at extreme low water, and then it would.

Mr. OLIS. It would not lower it substantially even at a time of low water, except the amount it would lower it, to that amount it would be more expensive to the shipping interests in low rather than in high lake levels.

Mr. ANGELL. It would affect it to the extent mentioned here a moment ago. It would substantially interfere with shipping.

Mr. OLIS. I still say it would not be substantial compared to what the 6-foot lowering would be. Certainly the shipping interests can complain to nature more than they can complain to diversion when the lake levels go down.

Mr. DONDERO. Mr. Olis, we have five other witnesses and we are trying to conclude by 12 o'clock. Is there anything else you want to add to your statement?

Mr. OLIS. There is one further point I want to make. That is, we believe this is the time when the study should be made because it was contemplated by the Supreme Court of the United States that it should be at a time when the treatment plants were completed.

I want to read from Master Hughes' statement, which indicates that that is true. In other words, the point I want to make is, we are not asking for anything which is in contradiction of the Supreme Court decree.

Mr. DONDERO. Mr. Olis, hasn't Chicago completed its sewage-treatment plant?

Mr. OLIS. Yes. It has completed the sewage-treatment works.

In Master Hughes' report there was this statement:

> The matters of the amount of diversion were indeterminate at the time because of the fact that the sewage-treatment plants had to be built.

In the statement Master Hughes stated, and I am quoting now:

> Provision should be made for further examination after the sewage-treatment plants have been completed and the effect of the effluent therefrom with the storm-water flow from the navigable channels has been observed to the end that the question of any further or other relief might have appropriate consideration in the light of actual conditions.

In other words, that statement of Master Hughes was incorporated in the United States Supreme Court proceedings and it was contemplated that this 1,500 cubic feet of diversion which was set by the United States Supreme Court was not a final determination. It was only one that should be there until these sewage-treatment plants were completed; and once they were completed then the question of additional diversion should be considered and determined in view of the actual conditions.

Mr. DONDERO. And that is the purpose of this legislation before this committee?

Mr. OLIS. That is correct.

Mr. NEAL. Mr. Chairman, may I ask another question here?

Mr. DONDERO. Dr. Neal.

Mr. NEAL. May I ask you what is the difference between the lake level and the level within the canal?

Mr. OLIS. We have a lock at the mouth of the Chicago River, which is a navigation lock, and I believe that the difference between the river and the lake is somewhere about 1 foot when the locks are closed.

Mr. NEAL. The rate of flow in the canal and the upper reaches of the Illinois River is quite slow, is it not?

Mr. OLIS. Yes; it is very slow. It travels less than 1 mile, or the current goes less than 1 mile per hour.

Mr. NEAL. You do recognize that a more rapid flow always has the tendency to act favorably toward purifying a stream of water that is going on down?

Mr. OLIS. That is correct.

Mr. NEAL. What has been the experience in the cities and towns down the Illinois River in respect to recurrent epidemics of so-called virus infections, manifesting themselves on the part of the stomach and digestive system? Do you have much of that down the river?

Mr. OLIS. I do not know that there are any of those adverse conditions that are due to the canal excepting that we do have a stream which can be improved, in spite of the fact that the Izaak Walton League here many years ago awarded the sanitary district a citation for sewage treatment and for the fine job we were doing in view of the fact that the stream downstate had been considerably improved and fish life was coming back in the lower stretches of the stream. We still think additional diversion would help the situation.

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Mr. NEAL. Do many of the communities down the river get their drinking water from this stream?

Mr. OLIS. No.

Mr. NEAL. They do not?

Mr. OLIS. No.

Mr. NEAL. Then that is really not a significant factor.

Mr. OLIS. No. The main objection downstate was on account of the destruction of fish life and the destruction of bathing facilities, and so forth; and on account of the noxious odors.

Mr. NEAL. It is a well-recognized fact that a greater flow of water in that stream will act very definitely to purify the water from every standpoint, is it not?

Mr. OLIS. That is correct.

Mr. NEAL. Thank you.

Mr. DONDERO. Are there any other questions by members of the committee?

(No response.)

Mr. DONDERO. Thank you very much, Mr. Olis, for your statement.

Mr. OLIS. Thank you.

Mr. DONDERO. The Chair will note that Congressman Gordon, of Illinois, has come into the committee room and is present and it will be noted in the record.

STATEMENT OF HON. THOMAS S. GORDON, MEMBER OF CONGRESS FROM THE EIGHTH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. GORDON. Thank you.

Mr. Chairman, I appreciate your calling me and I am certainly in accord with the support of H. R. 3300, and I ask that I be permitted to insert my statement.

Mr. DONDERO. Without objection, it is so ordered, and of course, the privilege has been given to other Members from the Chicago area, which includes Congressman Sheehan.

(The statement of Mr. Gordon is as follows:)

STATEMENT OF THE HONORABLE THOMAS S. GORDON, MEMBER OF CONGRESS FROM THE EIGHTH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. Chairman and members of the committee, I appear in support of H. R. 3300, and other identical bills introduced by the Chicago delegation in Congress and Representative Price of East St. Louis, Ill., which authorizes the diversion of water from Lake Michigan into the Illinois Waterway.

At the outset it is my convinced judgment that the Congress unquestionably has the authority to enact the legislation now pending.

Our Supreme Court in the so-called Lake Level cases (278 U. S. 367 and 281 U. S. 179) has consistently recognized that the power to grant the proposed diversion rests in the Congress. Special Master Hughes, in his report on rereference, in recommending the form of final decree to be enacted by the Supreme Court, likewise recognized that the Congress had the power to prescribe a different diversion than the final authorized 1,500 cubic feet per second.

It is also argued that the control of diversion from Lake Michigan rests in the International Waterways Commission under the 1909 Boundary Waters Treaty between the United States and Canada and not in the Congress. The answer to this argument, in the instant proposed diversion, is that article II of the 1909 Boundary Waters Treaty with relation to jurisdiction of the International Waterways Commission specifically exempted the diversion at Chicago, among others, and stated "but this provision shall not apply to cases already existing * * *."

As the proposed increased diversion of 2,500 cubic feet per second in addition to the presently authorized 1,500 cubic feet per second, or a total diversion of 3,500 cubic feet per second is below the diversion existing at Chicago in 1909 when the treaty was approved, the International Waterways Commission obviously has no control over such proposed diversion. The question of their jurisdiction could possibly only arise if the Congress now authorized a diversion in excess of the diversion existing in 1909.

As a Member of Congress from Illinois, I am interested in the development and improvement of the Illinois Waterway as a part of the Lakes-to-Gulf Waterway.

The project of constructing a navigable water connection between Lake Michigan and the Mississippi River engaged the serious attention of Congress for well over a century.

This dream was finally realized by the enactment of the Rivers and Harbors Act of 1930 when provision was made for the completion, as a Federal waterway, of the final link. In the same act the Congress directed the Secretary of War to make a study of the amount of water required as an annual average flow for a commercial useful waterway and authorized the use of the water, permitted by the 1930 decree of the Supreme Court, for the navigation of said waterway.

The Army engineers, in submitting their report in 1933 to the Congress, estimated that the tonnage using the waterway, then about 200,000 tons, would increase upon completion to 8 million tons annually. It is interesting to note that the freight traffic on this now most important artery of commerce for the year 1951 was in excess of 16 million tons, practically double the amount estimated in the original report of 1933.

The Army engineers in their report of 1933, further recommended, as did Special Master Hughes, that upon the completion of the construction program of sewage treatment works by the Sanitary District of Chicago, a further study be made of the need for diversion of additional water from Lake Michigan.

That time has now arrived. The Sanitary District of Chicago has now completed the sewage-treatment works. Practically all (99 percent) of the sewage is intercepted and, save in times of exceptional storms, is treated. The degree of treatment has reached a purification high in 1951 of 92.5. This is well above the minimum of 85 percent and the maximum of 90 percent estimated by Special Master Hughes in his 1929 report.

The effluent, after the sewage-treatment process, is emptied into the waterway and a deficiency in dissolved oxygen results. In order to maintain a clean stream an increase in diversion is therefore necessary to supply the required dissolved oxygen. The 2,500 cubic feet per second additional diversion authorized by these bills is needed to provide four parts per million of dissolved oxygen, which is the minimum desirable standard for a clean stream.

Opposition to any proposed increase in diversion is traditional with certain interests. Many of those who opposed a diversion in 1920 and 1930 continue in their opposition and choose to ignore the changed conditions now existing in 1952.

While nominally in the past certain of the lake States officially spearheaded the opposition, actually the navigation interests, particularly the lake carriers, were the moving spirits.

Their clamor of a serious lowering of the lake levels by diversion, resulted they claimed in a loss in revenue by their reduced tonnage. Now, despite the exceptionally high lake levels, and the admitted fact that the present proposed diversion will not appreciably lower lake levels, they continue in their opposition. The residents of the lake States, as distinguished from the navigation interests, I am convinced are not against this limited diversion. They seek relief from high levels which have caused serious damage to shore properties.

May I make my position clear. I am not opposed to aiding navigation, rather I am heartily in accord with rendering help to that arm of our national economy. Higher levels of the Great Lakes than presently existing, will not aid the lake carriers. Their boats are now loaded to capacity. Navigation in the Federal Lakes-to-Gulf Waterway will, however, be materially aided by the proposed increased diversion. This waterway which has shown an increase from 200,000 tons in 1933 to over 16 million tons in 1951 will, I am sure, show a further substantial gain if this increase in diversion is granted. Furthermore, these improved results can be obtained without the expenditure of any Federal funds for construction.

I appreciate the privilege of appearing before this committee to briefly present my views in support of the pending measures and sincerely hope the committee will favorably report this remedial legislation to the Congress for enactment.

Mr. DONDERO. Do you wish to make a statement, Congressman Sheehan?

STATEMENT OF HON. TIMOTHY P. SHEEHAN, MEMBER OF CONGRESS FROM THE 11TH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. SHEEHAN. Can I take a couple of minutes to put my statement in now?

Mr. DONDERO. Certainly. We will be glad to hear from you now, Mr. Sheehan.

Mr. SHEEHAN. In order to save time, I would like to have you consider as read my prepared statement, and point out one or two things that I think are of interest to members of the committee which are in the statement.

First of all, as you know, I introduced the original bill which was reported out by the committee. I want to point out the bill under consideration is an exception to most of the bills before Congress because we require no money for operation, maintenance, or construction, because that is already all done.

Secondly, I want to point out that the action the committee will take, if it takes it, will serve three purposes. It will purify the water flowing down the waterway; it will increase the efficiency of the sanitary district's operation; it will help in a small measure to reduce the lake levels.

I want to point out to the members of the committee, especially the new members, that the Supreme Court set up this procedure. They said that the people of Chicago have to go to the Congress for a change in the rules after setting up the 1,500 feet.

Some of the other witnesses will go into this legal question.

I also would like to point out that the engineers of the sanitary district will prove rather conclusively that the additional water will increase the benefits to downstate Illinois, and not decrease them, because they get a purer and better stream.

I also would like to state this in answer to Mr. Stanley here. I am no lawyer, but when the original International Joint Commission was set up they provided in the treaty itself for an outflow down the Chicago River of 10,000 cubic feet per second. In other words, when the water was divided between Canada and the United States they allowed each one to take out a certain amount of water.

In the original treaty it seems to me 10,000 feet was the amount Chicago was allowed to take. The Supreme Court reduced it to 1,500 feet. So in my estimation—and this should be taken up by the legal people here—any additional water up to 8,500 or 10,000 cubic feet should involve nothing at all with the International Joint Commission, because it is already set up in the original agreement.

That is all I have.

Mr. DONDERO. Your statement will be received and made a part of the record.

(The statement of Mr. Sheehan is as follows:)

STATEMENT OF CONGRESSMAN TIMOTHY P. SHEEHAN

Mr. Chairman and members of the committee, on behalf of the people of Chicago, my colleagues, and myself, I thank you for this opportunity to appear before your committee regarding the various bills introduced by all of the Chicagoland Congressmen, both Democrats and Republicans, for the purpose of obtaining the permission of Congress to increase the diversion of water from Lake Michigan into the Illinois Waterway.

During May and June of last year, the committee held similar hearings and reported out favorably H. R. 8165, originally introduced by me as H. R. 6100, which provided for an increase of water from Lake Michigan down the Illinois Waterway from the present 1,500 cubic feet per second to 2,500 cubic feet per second. That was the first time in a great many years that the Committee on Public Works reported favorably on such a bill. However, due to the rush in the closing days of the 82d Congress, we were unable to have the measure heard on the floor of the House before the end of the session and, consequently, the measure died with the adjournment of that Congress.

As can readily be seen from the sponsorship of the bills similar to H. R. 3192, all of the Congressman from Chicago are united in this effort. Insofar as only one of these bills will be chosen, I hope that the committee will report out H. R. 3300, introduced by Congressman Edgar A. Jonas.

I have noticed from my experience in Congress that whenever Congressmen plead for items for their districts or their particular cities, the proposals usually involve an expenditure of Federal funds. The subject bill is an exception to that general rule in that if Congress grants the State of Illinois and the Sanitary District of Chicago the permission we are seeking, it will not cost the Federal Government or the country's taxpayers 1 penny because the bill merely seeks the authorization of Congress to increase the rate of intake of water from Lake Michigan over the amount permitted by decision of the Supreme Court.

Specifically, the bill would authorize the State of Illinois and the Sanitary District of Chicago, under the direction of the Secretary of the Army, to divert additional water from Lake Michigan into the Illinois Waterway. This action has several meritorious purposes: (1) To help purify the water flowing down the Illinois Waterway; (2) to increase the efficiency of the sanitary district operation; and (3) to help in a small measure to reduce some of the damage due to the high level of the Great Lakes.

From legal advice given to us, we feel that we have to appeal to the Congress for relief from the Supreme Court decree issued April 21, 1930, which limited the annual average diversion of water from Lake Michigan to 1,500 cubic feet per second on and after December 31, 1938.

That decree also bound the Sanitary District of Chicago to complete sewage-treatment facilities for all waste originating in the district. That part of the decree has been fully complied with and the sanitary district now boasts the most complete and modern treatment plant in the world and visitors come from all over the world to find out how we attain such a high degree of purification and efficiency in the treatment of our sewage.

The Supreme Court edict, in setting the limit of diversion at 1,500 cubic feet per second, left the door open to modification, in that the Court, while reserving jurisdiction in the matter, indicated that since Congress has jurisdiction over navigation and navigable streams, it alone could grant an increase in diversion. Other witnesses appearing before the committee will, I assume, go into the legal phases of this more comprehensively. We are relying on the Supreme Court edict and are seeking relief through the proper action of Congress.

I believe that other witnesses will prove from the standpoint of proper engineering and sanitation standards that the downstate areas in Illinois will be benefited by this increased flow because the dangers of pollution will be lessened and that vegetable and fish life will be benefited also.

In the past there has been some mention that the increased diversion proposed will prove harmful in times of floods or will increase the danger of floods. I believe the engineers from the sanitary district will prove conclusively to the committee that there is no danger of increased diversion adding to the flood

hazards in the downstate areas because during times of floods the Army engineers, who control the flow of water down the Illinois Waterway, cut off the diversion from Lake Michigan.

In our presentation last year we had asked for an increase of 2,000 cubic feet per second, and attempted to show that an increase of even 8,000 to 10,000 cubic feet per second would have no serious consequences to the downstate areas. When the bill was reported out the basis of 2,500 cubic feet per second was arrived at because of the recommendations of the Army Corps of Engineers, which felt that the increase of 2,500 cubic feet per second at that time would permit them to study the whole situation after short experience with the increased flow.

The feeling is still the same, in that if an increase of 1,000 or 2,000 cubic feet per second is granted, the Army engineers will be able to study the matter fully and report back to Congress at a later date, therefore, there can be no permanent harm to downstate Illinois or any other area.

I again want to emphasize that this is simply remedial legislation, involving no outlay of Federal moneys, and I do not think I need point out to you the many occasions that Congress, in attempting to alleviate conditions of flood, drought, or tornado disaster, has passed remedial legislation which involved the appropriation of large sums of money. Here is an instance where the Chicago area is asking Congress for relief and is not simultaneously requesting any appropriation of funds.

I hope the good judgment of this committee will favorably report out a bill authorizing the increased diversion that is being requested.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., July 16, 1953.

Hon. GEORGE A. DONDERO,
Chairman, House Committee on Public Works,
Washington 25, D. C.

DEAR MR. CHAIRMAN: I am very much in favor of the bill filed by our colleague, Congressman Edgar A. Jonas, of Chicago, H. R. 3300, a bill to authorize the State of Illinois and the Sanitary District of Chicago under the direction of the Secretary of the Army to help control the lake level of Lake Michigan by diverting water from Lake Michigan into the Illinois Waterway.

Those of us who live on the lakefront of Lake Michigan, know how vitally necessary it is that the bill be enacted promptly. Thank you very much.

Sincerely yours,

SIDNEY R. YATES,
Member of Congress.

Mr. DONDERO. Mr. Casimir Griglik, of the Sanitary District of Chicago.

STATEMENT OF CASIMIR GRIGLIK, TRUSTEE OF THE SANITARY DISTRICT OF CHICAGO

Mr. GRIGLIK. Mr. Chairman and members of the committee, I thank you for the privilege of appearing before your committee. I too had the opportunity of appearing before this committee at the last Congress and I made a talk there. In the interest of saving time I would ask leave to have my remarks during the previous hearings included in this record.

Mr. DONDERO. Without objection, it is so ordered.

Mr. GRIGLIK. In addition to that I should like to read a short prepared statement with reference to the various bills.

These bills authorize an increase in diversion of water from Lake Michigan into the Illinois Waterway, in the amount of 2,000 cubic feet per second, in addition to the present amount of 1,500 cubic feet per second annual average now authorized by permit of the Secretary of the Army pursuant to the 1930 decree of the Supreme Court of the United States.

The bills direct the Secertary of the Army to make a study of the effect in the improvement in the conditions of the Illinois Waterway by reason of this increase in the diversion and to report the study results to Congress before January 31, 1956, with the Army's recommendation as to the continuation, increase, or decrease as to the proper diversion amount. The Army made a report to Congress in 1933, when a diversion of 5,000 cubic feet per second, plus domestic pumpage, was authorized, and stated that while in their judgment, aside from sanitary requirements, a minimum average diversion of 1,500 cubic feet per second plus domestic pumpage as ultimately authorized by the Supreme Court decree would meet the needs of a commercially useful Illinois Waterway, a further study should be made when the sewage-purification plants had been completed and placed in operation by the Sanitary District of Chicago.

That time has now arrived and no studies as to the Illinois Waterway, on this phase, have been made since 1933.

After the hearings before the House Public Works Committee of the 82d Congress in June 1952, the Army engineers recommended an increase in diversion and authorization for the further study, recommended in 1933. They stated 3 years would be required for such study. The Committee on Public Works in the 82d Congress favorably recommended similar bills, following the Army engineers' recommendations.

These bills authorize such a study, their report to be submitted to Congress on January 31, 1956.

I sincerely hope that this committee will see its way clear to report these bills, because I am confident that the findings of the Army engineers will not only inure to the benefit of the shipping interests, but also to the benefit of the people of Illinois, Ohio, and Michigan.

I just want to take time out, gentlemen, to point out a coincidence. I think Chicago has been a victim of circumstances. When the Great Lakes Conference sued the Sanitary District of Illinois and demanded that they decrease the flow from Lake Michigan, it happened to occur in one of those low cycles. The suit started in 1926 and ended in 1929. During the term or period that the lawsuit was in progress the lake level had risen almost 3 feet, and in 1928 we were flowing 10,000 cubic feet per second through the canal.

The reason I mention that, gentlemen, is simply this: Apparently from all of the data that has been presented here today the increased diversion of a thousand cubic feet per second will have absolutely no material effect on the rise and fall of the lake level, which in any case comes in cycles. We need that water and need it for the reasons Mr. Olis pointed out, and for the reasons that my prepared statement points out.

The chief argument is that we need additional oxygen. The effluent after it leaves our plant really leaves Chicago. Frankly, we should not be interested in it, but we are interested in it because we are citizens of Illinois and we realize what must be done to preserve the fish life down there, and the good will of our neighbors downstate. We are creatures of the State legislature, and if we do not look out for their interests, they might put us out of business.

Thank you very much.

Mr. SCUDDER. Mr. Chairman, I am sorry I was late and have not heard the testimony thus far given, but I have a letter from the Illinoian Star signed by Mr. L. T. Schaeffer, in which the first paragraph says:

> The Illinoian is opposed to any increased water diversion down the Illinois River from Lake Michigan.

Then the body of the letter continues and the last sentence says:

> Surely you cannot recommend the sending of more water past Beardstown without approving money for the flood-control program here.

I imagine their opposition to the legislation would not be here if proper protective measures were taken along the river. Is that correct?

Mr. GRIGLIK. Mr. Congressman, I do not pretend to know the full answer to that, but as far as I know I think their fear is more fanciful than real. They had a flood down there, but it was due to no cause of Chicago, but due to overflowing of the Des Plaines River. They have not had one since. That was many years ago.

Is that right, Mr. Ramey?

Mr. RAMEY. That is right.

Mr. GRIGLIK. And we have flowed as much as 10,000 cubic feet per second down there with no deleterious effects at all.

Mr. SCUDDER. They claim there is a dike built fronting their city, but it was not properly maintained. As I read the letter, the State of Illinois did not keep up the dike that was built to protect the city.

Mr. GRIGLIK. If they have a dike there, it seems to me that would be a local problem. But Mr. Ramey, our assistant chief engineer, just told me when they had the flood down at Beardstown the flow was at a rate of 115,000 cubic feet per second. So that was an unusual storm condition and had absolutely nothing to do with the conditions at Chicago.

Mr. SCUDDER. It would appear to me, without knowing your full problem, that if you did increase the flow of water to the point where it was endangering a city along the river banks, it would not be particularly up to the city so located to take care of the flood caused by an abnormal condition.

Mr. GRIGLIK. Mr. Ramey gave me the answer to that. In flood times we control the locks and they can be shut off or opened at will. So there is absolutely no fear of what the newspaper refers to there.

Mr. SCUDDER. Thank you.

Mr. DONDERO. Dr. Neal.

Mr. NEAL. Do you have an estimate of the actual rise in the ordinary flow at Beardstown which would result from taking in this much more water from the lakes?

Mr. GRIGLIK. No. I am sorry, but I do not have that information.

Mr. NEAL. It would be quite immaterial, would it not?

Mr. GRIGLIK. I think so, because the increased flow would only increase it 0.8 of an inch, as Mr. Olis pointed out, and when it gets downstream it will not have that same proportion. It will be dissipated. When it reaches there, it may be 0.1 of an inch.

Mr. DONDERO. Thank you very much.

Mr. GRIGLIK. Thank you.

Mr. DONDERO. Your statement made at the previous hearing may be incorporated in the record at this point.

(The statement of Mr. Griglik made at the previous hearing is as follows:)

STATEMENT OF CASIMIR GRIGLIK, TRUSTEE OF THE SANITARY DISTRICT OF CHICAGO

Mr. GRIGLIK. Mr. Chairman and members of the committee, Mr. Olis covered the situation very, very nicely, and practically all of the points involved. Rather than risk trespassing on some of the points that are going to made by the other members of our delegation I have reduced this particular statement to writing, which elaborates on just one phase of the problem.

With your permission I would like to read it.

My name is Casimir Griglik. I am one of the nine trustees of the Sanitary District of Chicago. The controversy between the State of Illinois and other Lake States over the diversion of water from Lake Michigan at Chicago for the disposal of its sewage, or a large part thereof, arose and was settled before I became a member of the board of trustees of the sanitary district.

The decision of the United States Supreme Court, January 14, 1929, in the case of *The State of Wisconsin et al.* v. *The State of Illinois and the Sanitary District of Chicago et al.*, to the effect that "insofar as the prior diversion was not for the purposes of maintaining navigation in the Chicago River it was without legal basis," settled the legal question in this case.

The practical questions in this case were settled in the decree of the Supreme Court, April 21, 1930, reducing the diversion of water at Chicago, by December 31, 1938, to 1,500 cubic feet per second, annual average, in addition to domestic pumpage, and requiring the construction and operation of complete treatment works for all the sewage of the sanitary district.

The sanitary district has met its obligations in this respect. The diversion was reduced to the ultimate amount, 1,500 cubic feet per second, at the end of 1938. Sewage treatment plants have been in service since 1922 treating increasing amounts of sewage, from time to time, until by April 1950 plants were available for the complete treatment of all the seawage of the sanitary district. Today, approximately 99 percent by volume of all the sewage is intercepted and, under normal conditions, is taken to the plants for complete treatment. The degree of treatment for such sewage in 1951 was 92.5 percent, which is a very good record indeed.

More sewers are being constructed now in the outlying areas of the sanitary district and to communities recently annexed to the district, in order to bring all the sewage to the treatment plants, except during heavy rains. Such additional sewer construction will continue indefinitely, as long as Chicagoland grows—and it is a healthy community.

The conditions under which all the sewage intercepted does not reach the treatment plants occur 10 to 15 times per year, at the times of heavy rains. The sewers to the treatment plants will carry only 2 to 3 times the dry-weather flow of sewage. Storm flow amounts to 8 to 10 times the dry-weather flow, and such excess flow of sewage and diluting water passes through control structures to the river and canal. Thus a certain relatively small amount of sewage passes into the canal in a raw state.

When the effect of this storm sewage, with no treatment, is consolidated with the sewage receiving 92.5 percent treatment, the overall annual average degree of treatment of all the sewage is something less than the 92.5 percent. In 1951 it may have been about 85 to 88 percent. Judge Hughes, in his December 17, 1929, report on rereference, concluded that such operation "should attain not less than an annual average purification of 85-percent purification of the sewage treated, and that it is probable that the degree of purification will be 90 percent or more."

All that Judge Hughes concluded in 1929 has been attained by the sanitary district in 1951 and may be taken as the average condition which probably will prevail in the future.

Now, consider the effect of the discharge of this sewage, treated and untreated, into the Chicago drainage canal, which is a part of the Federal waterway between the Great Lakes and the Gulf of Mexico. I will assume 88 percent as the overall degree of treatment of all the sewage, which the engineers tell me is on the high side. This means that the equivalent of 12 percent of the raw sewage passed to the canal. The human population and industrial wastes equivalent in the sanitary district in 1951 was equal to pproximately 7,400,000 persons; and 12 percent of 7,400,000 people amounts to 888,000 people.

The wastes going into the Federal waterway from the sanitary district, after treatment to as high a degree as is reasonable, or perhaps possible, are equivalent in effect to the raw sewage of 888,000 people. That is approximately equivalent to the population of Washington, D. C. The diluting water to effect the final purification of this stream is 1,500 cubic feet per second, or 1.7 cubic feet per second 1,000 persons. When the Illinois Legislature passed the Sanitary District Act in 1889, a dilution ratio of 3⅓ cubic feet per second per 1,000 persons was specified. Sanitary engineers later concluded that this was a minimum requirement and that diluting water of 4 cubic feet per second or more per 1,000 persons was a more realistic figure.

The Sanitary District of Chicago built the drainage canal from Chicago to the northern part of Joliet, and improved the Des Plaines River through Joliet to the present Brandon Road pool of the Illinois Waterway. These improvements have been a part of the Federal waterway since 1930. Today this waterway, on which about 15 million tons of freight are transported each year, is polluted to an extreme degree, approaching that of nuisance. Since the sanitary district built it and is using it for its proper corporate function, the sanitary district is blamed for its condition.

The sanitary district is, therefore, supporting—and I speak in behalf of—H. R. 6098 and H. R. 6100, for diversion of an additional 2,000 cubic feet per second from Lake Michigan at Chicago. This diversion, if authorized, would increase the total diversion to an annual average of 3,500 cubic feet per second, in addition to domestic pumpage, and increase the dilution ratio on the wastes going into the waterway from the 1.7 cubic feet per second per 1,000 persons previously stated to almost 4 cubic feet per second per 1,000 persons. Such a ratio should result in a clean stream for the navigators and the residents along the shores and in less criticism of the sanitary district in the future.

The 1,500 cubic feet per second diversion specified in the Supreme Court decree of April 21, 1930, was the amount recommended by Special Master Charles Evans Hughes in his report to the Court on rereference, December 17, 1929, as the amount of water "necessary for the purpose of maintaining navigation in the Chicago River, as a part of the Port of Chicago." He had defined the port of Chicago to include the sanitary canals above Lockport. This excluded any part of the waterway below the first lock and dam at Lockport.

It is appropriate that Congress should now consider the needs of this section of the waterway, heretofore excluded, so that navigation may be free, easy, and unobstructed from pollution by sewage, treated or otherwise.

I will not discuss the matter of lake levels, but leave that to other witnesses. In years past the sanitary district properly contended that its diversion had small effect on lake levels: that a diversion of even 10,000 cubic feet per second causing a lowering of 6 inches was a minor effect when compared to the natural changes in lake levels of as much as 5 feet. I understand that a diversion of 2,000 cubic feet per second would lower lake levels about 1¼ inches and would help to that extent in times of high lake levels such as at present.

That is about all I have to say, gentlemen, except I want to conclude by reaffirming what Mr. Olis said with reference to the careless remarks made about the bill to the extent that it is designed especially for the relief of the sanitary district.

Generally speaking, gentlemen, I would like to say this: After the effluent leaves our sewage plant in the southwest plants, it is by that time actually beyond the corporate limits of the city of Chicago. So we in Chicago as such do not particularly need this water, but we do need it for the sake of the people who live down in the lower valley. The reasons in my opinion why we are and should be for this bill are simply this: The sanitary district is created by the State legislature. They tell us what our power and duties are. They tell us how much money we can or cannot spend. It is certainly very much to our interest to see that the people down-State who control the State legislature feel kindly toward us and let us have the money needed or required to operate the sanitary district. Therefore, as we see it, this additional water will not only help navigation but it will help restore and sustain fish life in the Illinois and the pristine beauty of the Illinois River—is that what you said, Mr. Ramey—and will bring back those beautiful fish that Mr. Mason talked about with such nostalgia yesterday. I believe they are entitled to have sturgeon down there if they can get them, and we would like to see them get them.

If you give them this increased diversion, as Mr. Olis pointed out, you will not only supply the additional oxygen content to sustain that fish life but you will also supply the water that is essentially needed to provide the final dilution of this excess sewage which I described in this little statement I made.

I thank you very kindly for this privilege of appearing before you gentlemen. I am ready to answer any questions that I think I might be able to. If not, I will call on our engineers and lawyers here.

Mr. DONDERO. We will hear from Mr. Patterson, trustee of the Sanitary District of Chicago.

STATEMENT OF WILLIAM F. PATTERSON, TRUSTEE OF THE SANITARY DISTRICT OF CHICAGO

Mr. PATTERSON. Mr. Chairman and gentlemen, thank you for the opportunity to appear before this committee.

I think it might be proper if I were to describe very briefly something about the digestion of sewage. Nature in the stream has the property of assimilating and digesting large amounts of sewage. The general types of bacteria that feed on, digest, and change sewage from the condition it is in when it is raw sewage to the end product, are classified as two groups; aerobic bacteria, which must have oxygen to exist; and anaerobic bacteria. In nature there is enough oxygen taken in by a stream as it moves down a hillside and tumbles over the rocks so that the promotion of an aerobic bacterial growth is encouraged and the sewage is digested without the creation of septemic condition, and the giving off of odors of rottenness that follows when no oxygen is available.

If you have a stagnant cesspool where sewage is just allowed to stand, the oxygen almost immediately is exhausted and you further the growth of an anaerobic bacteria, which gives off hydrogen disulfide, and you have a rotten mass left.

Our treatment process is designed on the theory that we encourage and promote the growth of an aerobic bacteria. This 1 billion plus gallons of sewage a day that President Olis mentioned to you is directed through interceptors into what we call an aeration tank. If you can visualize a tremendous swimming pool several blocks long that is baffled in such a way that the sewage flows through these baffles for 5 or 6 hours, that will give you a picture of it. The bottom of the pool has a slab which is called a stone which is porous. Air at terrific pressure is forced through the stone and bubbles through that raw sewage as it come up one end. As it come through there it is converted into an aerobic bacterial action.

There are no noxious fumes given off. The residue is dried and made into fertilizer. It goes into these aeration tanks, and into settling tanks, where it is like a huge funnel, and the solids fall to the bottom of the funnel and the effluent flows over the top.

I asked the engineer at the southwest plan to go out to the spillway where our effluent is discharged into the sanitary canal at the southwest plant and had him fill a little bottle for me on July 13 of the effluent. This is a rebuttal in anticipation of what you may hear later on from the downstate interests. This is this noxious and horrible effluent.

Mr. NEAL. Perfectly drinkable.

Mr. PATTERSON. I wouldn't recommend it, but it is perfectly good for lawns.

Mr. NEAL. I have seen it done.

Mr. PATTERSON. It is not harmful. There is no odor to it. If you wish me to I will open it for you. There are about 900 million gallons of that effluent discharged into the sanitary district canals that ulti-

mately reaches the Des Plaines River and goes down the Kankakee and reaches the Mississippi River.

Mr. DONDERO. Is that the effluent which is 92½ percent pure?

Mr. PATTERSON. This is the liquid residue after the solids are taken out.

Mr. DONDERO. In that proportion or percentage I just mentioned?

Mr. PATTERSON. This represents the 7.8 percent of solids. It is a practical impossibility to refine it any purer than it is refined. It has the noxious property of being very demanding of oxygen. The oxygen in the liquid is completely gone. It requires considerable dilution to satisfy the demand for oxygen that this effluent makes.

We feel our responsibility is to maintain a clean stream. Our engineers have told us we need 2,000 second-feet in addition to the 1,500 second-feet we are using now to mix with this effluent in order that there be 4 parts per million of oxygen in the water below the locks at Lockport, which is where it finally leaves us.

You have other cities on the Des Plains and Illinois Rivers such as Berlin, Ottawa, Marseilles. Some of those towns have no treatment plants and they are dumping raw sewage into the river. If there was sufficient oxygen in that water as it flowed by their villages and if there is sufficient flow and oxygen, nature will take care of that and it will not be obnoxious. But when we are consuming all of the oxygen in the water because of our limited diversion then there is no possibility for an aerobic digestion below of the raw sewage that these other towns put in. Whereas if we can give them water with sufficient oxygen in it, then nature will handle their sewage problem, and as you go further downstream you just have an accumulation that gets worse and worse.

That, gentlemen, is all I have to say. Thank you. Are there any questions?

Mr. STAUFFER. Mr. Chairman, I have just one question.

Mr. DONDERO. Mr. Stauffer.

Mr. STAUFFER. What is the per capita sewage? What is the amount of sewage per capita in Chicago? I have heard it is very high.

Mr. PATTERSON. We estimate a population of about 5 million in the district and industrial wastes equivalent to 3 million, which would be the equivalent to sewage waste of 8 million people.

Mr. STAUFFER. But per capita what is that? I can figure it, but is it not around 300 gallons a day?

Mr. PATTERSON. Our total inflow of sewage runs better than 1.1 billion or 1.2 billion gallons per day.

Mr. STAUFFER. That would be a little over 200 gallons per capita.

Mr. PATTERSON. Something in that order; yes.

Mr. DONDERO. Are there any questions?

(No response.)

Mr. DONDERO. Thank you very much, Mr. Patterson, for your statement.

Mr. Ramey, the assistant chief engineer of the Sanitary District of Chicago.

Mr. Ramey, do you have a prepared statement?

STATEMENT OF HORACE P. RAMEY, ASSISTANT CHIEF ENGINEER, SANITARY DISTRICT OF CHICAGO

Mr. RAMEY. I have nothing to add to the statement made a year ago, but I am willing to answer any questions that the committee might ask.

Mr. DONDERO. The Chair remembers your presence here a year ago when the same subject matter was here for discussion.

Are there any questions that you would like to ask Mr. Ramey?

(No response.)

Mr. DONDERO. If not, and if you have a statement we will receive it for the record.

Mr. RAMEY. I have nothing except the statement made a year ago and I will put in a statement bringing up to date the record on sewage treatment.

Mr. DONDERO. It will be received and made a part of the record.

(The statement of Mr. Ramey is as follows:)

STATEMENT OF HORACE P. RAMEY, ASSISTANT CHIEF ENGINEER, SANITARY DISTRICT OF CHICAGO

Mr. RAMEY. My name is Horace P. Ramey. I am assistant chief engineer of the sanitary district and I speak on behalf of House bill 6098 and House bill 6100.

The case for increased diversion of water from Lake Michigan at Chicago rests upon the desirability for a clean stream throughout the Illinois Waterway. This affects the residents of the Des Plaines and Illinois Valleys more than Chicago.

The reason for the concern of the Sanitary District of Chicago in this matter arises from the fact that the sanitary district built the drainage canal from Chicago to Joliet and improved the channel of the Des Plaines River through Joliet. At the present time, even though the Federal Government has taken over these channels and now operates them as a part of the Federal Waterway system between the Great Lakes and the Gulf of Mexico, the sanitary district is blamed locally for the contamination which exists in these streams.

The waterway is badly contaminated from Chicago to the Brandon Road pool, south of Joliet, and to only a slightly less degree on down to the Dresden Island pool.

That is at the head of the Illinois River, and from that point down the stream is now in reasonably good condition.

President Olis covered our case very, very well. I merely want to introduce an exhibit which will show the specific increase in sewage treatment in the sanitary district from 1940 down to 1951.

Mr. MACHROWICZ. Without objection it may be included in the record.

(The document referred to is as follows:)

The Sanitary District of Chicago sewage treatment

Year	Domestic pumpage, cubic feet per second	Sewage treated		Sewage solids, tons per day		Population equivalent from flow and BOD	BOD in sewage, pounds per day	Overall BOD reduction, percent	BOD, pounds per day	
		Cubic feet per second	Million gallons per day	In sewage	Removed				In treated effluent	In canal at Lockport
1940				654.2	415.0					
1941	1,610	1,596	1,064	729.0	432.9	6,512,300	1,085,400	54.2	496,600	411,300
1942	1,575	1,548	1,032	732.7	398.2	6,693,500	1,115,700	55.5	495,800	416,700
1943	1,605	1,572	1,048	695.6	391.0	6,594,000	1,099,000	51.6	533,300	457,400
1944	1,606	1,535	1,024	757.2	412.0	7,149,900	1,191,700	49.8	598,800	418,200
1945	1,587	1,539	1,026	773.4	486.9	6,785,700	1,130,900	59.5	417,100	312,200
1946	1,600	1,534	1,023	817.7	572.5	7,503,200	1,243,100	67.8	400,100	289,600
1947	1,616	1,647	1,098	823.8	580.8	7,270,700	1,205,600	67.5	392,100	320,000
1948	1,640	1,598	1,065	842.1	641.5	7,278,600	1,213,000	76.6	284,100	202,000
1949	1,641	1,596	1,064	823.7	658.0	7,309,100	1,218,200	79.3	250,900	193,000
1950	1,607	1,686	1,124	820.8	700.3	7,321,700	1,220,300	88.2	143,700	134,100
1951	1,616	1,714	1,143	821.5	733.9	7,394,200	1,232,800	92.5	92,200	116,600

Mr. RAMEY. The third column from the last on that is headed "Overall BOD reduction, percent." That means the biochemical oxygen demand. That exhibit shows in 1941 the sanitary district accomplished 54.2 percent reduction in BOD on all the sewage treated. In 1951 that figure was increased to 92.5 percent, and that is about all that can be reasonably expected on complete sewage treatment.

Several questions have been asked about lake levels.

Mr. DONDERO. What was that percent?

Mr. RAMEY. 92.5. In 1929, when Special Master Hughes made his recommendation to the Supreme Court, he suggested that we should get 85 percent, or perhaps 90 percent overall treatment of the sewage. We have already gone a little bit beyond what Special Master Hughes recommended as a reasonable job.

Several questions have been asked about lake levels. I would like to introduce for the record a memorandum which I prepared on lake levels in which the answer to most of these questions can be found.

Mr. MACHROWICZ. Without objection that memorandum may be included.

(The document referred to is as follows:)

GREAT LAKES LEVELS, AND THEIR CHANGES, BY H. P. RAMEY, FOR MEETING OF HYDRAULIC SANITARY AND MUNICIPAL SECTION OF THE WESTERN SOCIETY OF ENGINEERS, JANUARY 14, 1952.

The water levels of the Great Lakes are presently in one of their periodic high stages; much damage is being done to unprotected shore property and the owners are crying for relief; hence a discussion of these levels seems quite appropriate at the present time.

Few people realize that the levels of the Great Lakes fluctuate through a range as wide as 5.1 feet on an annual average basis, as much as 6.3 feet on a monthly average basis, some 2 to 3 feet more on daily averages and even more on hourly averages.

A few examples of wide fluctuations in lake levels, in relatively short periods of time may be cited.

The level of Lake Superior rose 2.68 feet in 6 months, March to September 1869; and fell 1.75 feet in 7 months, August 1897 to March 1898.

The level of Lake Michigan fell 2.58 feet in 8 months, July 1871 to March 1872; and 3.29 feet in 20 months, July 1929 to February 1931. The level of this lake rose 2.10 feet in 6 months, January to July 1876; and 2.20 feet in 6 months, January to July 1916; and 3.74 feet in 17 months February 1928 to July 1929. The latest rise was 3.34 feet in 20 months, from December 1949 to August 1951.

The level of Lake Erie fell 3 feet in 8 months, June 1919 to February 1920; and 3.15 feet in 10 months, May 1930 to March 1931. The level of this lake rose 2.52 feet in 7 months, October 1928 to May 1929; and 3.68 feet in 16 months, February 1942 to June 1943.

The level of Lake Ontario fell 4.08 feet in 7 months, from June 1867 to January 1868; and 4.12 feet in 19 months, from June 1948 to January 1950. The level of this lake rose 3.49 feet in 7 months, December 1875 to July 1876; and 4.70 feet in 16 months, February 1942 to June 1943.

There are certain basic data, which may be briefly summarized as follows:

Lake Superior, with a water surface area of 31,800 square miles, lies 21.2 feet higher than Lakes Michigan and Huron.

Lakes Michigan-Huron, which become one lake from a hydraulic standpoint because of the broad and deep connection through the Straits of Mackinac, with water surface area of 45,400 square miles, lie only 8.6 feet higher than Lake Erie. The navigation channels between Lakes Huron and Erie are more than 20 feet deep, hence these lakes are closely interconnected.

Lakes St. Clair and Erie, with water surface area of 10,400 square miles, lie 326 feet above Lake Ontario.

Lake Ontario has a water surface area of about 7,500 square miles.

The five Great Lakes have a water surface area of approximately 95,100 square miles, which comprises 32 percent of the total drainage area of 298,000 square miles.

CHANGES IN LAKE LEVELS

Natural changes in lake levels are due to—

1. Variation in rainfall, in long-term cycles.
2. Variation in rainfall, runoff, and evaporation, in annual cycles.
3. Ice.

4. Winds.
5. Tides.
6. Seiches, because of sudden changes in barometric pressure.
7. Earth tilt.

Artificial changes in lake levels are due to—

8. Changes in outlet conditions.
9. Diversions from the Lakes.
10. Diversions into the Lakes.

LONG-TERM CYCLES

The greatest single cause of change in lake levels is long-continued excess, above the average, in annual rainfall and runoff, less evaporation, for a rise in levels; and long-continued deficiency in the same for a drop in levels. These occur in long-term cycles of 7 years or longer.

Many scientists have maintained that the levels of the Great Lakes rise and fall according to a regular cycle, with periods of almost 23 years between the maximum highs; and with the minimum lows occurring about midway between the maximum highs. This has been ascribed to solar radiation which varies on a cycle of approximately 22.75 years and is presumed to affect precipitation. This is a reasonable explanation of the long-term rise and fall of lake levels. Other swings in lake levels occur over periods of 5, 7, and 11 years of rise or fall. The 23-year cycle includes both rise and fall; and some scientists have endeavored without too much success, to assign to these shorter swings some definite proportion of the longer cycle. The record of levels on the Great Lakes, about 100 years, is not long enough to support such conclusions with exactness.

It is a fact that extreme high levels have prevailed in the Great Lakes in 1862, 1886, 1907, 1929, and 1951, these years of highest annual average levels being 21 to 24 years apart. In this connection your attention is called to a paper submitted to the Western Society of Engineers February 8, 1943 (published in the Society Journal December 1943) by H. A. Musham, a naval architect, of Chicago, and long-time student of lake levels. This paper was entitled "The Practical Application of the Rhythmic Fluctuation of the Levels of the Great Lakes." One item in this paper is of particular interest. A forecast, made in 1940 for the Great Lakes country, predicted wet weather 1941–47, dry weather in 1947 and 1948, after which increasingly wet weather was to prevail until 1950–54, the end of a 23-year period in which lake levels were to culminate in one of their periodic highs. This 1950–54 period is not yet over, but in 1951 the precipitation in Chicago was about 43 inches, or 31 percent above the normal of 32.8 inches and the lake levels were the highest since 1929.

Records of rainfall around the Great Lakes show that the total rainfall over widespread areas is considerably heavier in some years than in others; and that variations from 10 percent above to 10 percent below the long-term average are common.

An example of extreme variation in rainfall over a wide area is from the precipitation records at Chicago, Detroit, and Duluth, for the climatic year July 1, 1881, to June 30, 1882, compared to the like year 1894–95.

	1881–82	1894–95
	Inches	*Inches*
Chicago, Ill	49.9	22.9
Detroit, Mich	48.1	19.9
Duluth, Minn	50.3	21.6

Thus in the wet year the precipitation was about 2.4 times that in the dry year.

Cycles of rainfall observations, extending back 150 years, indicate there has been no important "permanent" change in precipitation, although observations of the 69 years, 1860 to 1929, do indicate a slight but well-defined decrease of rainfall during that period.

The rapid cutting off of the pine forests, particularly in northern Michigan, between 1870 and 1890, has been estimated by some to have caused a water loss to the Great Lakes, but a careful study of the records 1860 to 1929 does not indicate that this has had any measurable effect on the water supply. It has, however, hastened the runoff and changed the distribution of evaporation and transpiration.

The water surface of Lake Superior comprises 39.5 percent of the entire watershed of that lake; the water surfaces of Lakes Michigan-Huron comprise 32 percent of their watersheds; the surfaces of Erie and St. Clair, 25 percent; and Ontario, 22 percent. On all the Great Lakes the water-surface areas amount to 32 percent of the total drainage areas.

Because of the relatively large proportion of water surface in the entire catchment area, evaporation has an unusually large effect on the elevations and discharges of the Great Lakes.

Apparently in the dry years the evaporation loss is greater than average; hence the percentage of water from rainfall reaching the lake outlets is much less than the deficiency in supply, as indicated by the lessened rainfall alone. The opposite is true in the wet years when more water is supplied from the excess rainfall and a greater percentage of this reaches and remains in the Lakes because of the lessened evaporation in such years.

As an example of the effect on lake levels of continued dry years, the level of Lake Michigan dropped 3.26 feet, annual average basis, from 581.40 in 1918 to 578.14 in 1926. On monthly averages the drop was 4.6 feet, from July 1918 to January 1926. Precipitation for the 9 years 1917 to 1925, inclusive, averaged about 92 percent of normal. The rainfall deficiency was only 8 percent, but it was continuous except for 1 year, 1921, when it was only 3 percent above normal.

The effect of a few continued wet years has been observed recently. The surface level of Lake Michigan at Chicago has risen 2.35 feet, from the yearly average of 579.18 in 1948 to 581.53 in 1951. On monthly averages this rise has been 3.34 feet, from 578.22 in December 1949 to 581.56 in August 1951. The rainfall was normal in 1948, but it has averaged 21.3 percent more than normal for 3 years, 1949, 1950, and 1951. In 1951 precipitation was about 31 percent above normal.

ANNUAL CYCLES

Each of the Great Lakes ordinarily stands about 1 foot or more higher in summer than in winter. This rise is due principally to the heavier spring rainfall, melting of snow and ice, the release of icebound tributary streams, and another very important item, namely, the small evaporation loss during the late spring and early summer. After reaching a peak, about midsummer, the level of each lake usually drops back gradually during the fall and early winter to a low winter level. This is due to greater evaporation, particularly in August, September, and October, and to the lessened stream inflow in the later part of the year when the rainfall is usually less. When winter begins and small tributaries become icebound, the inflow is further diminished and the lakes reach their lowest levels some time during the winter.

The latitude of the lake and the temperature of its region has some effect on the time of the spring rise, in this yearly cycle. Lake Superior, the northernmost lake, usually stands at minimum stage in March and at maximum stage in September. Lakes Michigan and Huron usually reach their minimum levels in January or February and their maximum heights in August. Lake Erie is usually at minimum stage January or February and maximum in July. Lake Ontario is at minimum stage usually in February and maximum in June.

ICE

The effect of ice on the levels of the Great Lakes is quite important and, to a considerable extent, unpredictable.

The deep freezing of tributary streams, varying in amount from year to year, temporarily holds back inflow into the lakes and produces a seasonal effect.

In extremely cold winters the clogging of an outlet stream by ice may so diminish the outflow that the lake above will rise and the downstream lake will fall. Such clogging may result from an exceptional amount of ice cover, lasting for many weeks, or from an ice jam of much less duration, but of much greater clogging effect.

In some winters the discharge of the St. Clair and Detroit Rivers has been reduced as much as one-half, for as long as a month, by ice obstructions. In other open winters there has been very little obstruction.

The discharge of the Niagara River is seldom reduced by ice more than about 5 percent for a month, although for brief periods this reduction has been as much as 10 percent.

As an average, the outflow from Lake Huron is reduced because of ice, by 42,500 cubic feet per second for the month of February, by 28,000 cubic feet per second for the months of January and March, about 14,000 cubic feet per second

for April and 6,000 for December. The yearly average figure used for correction of discharge from Lake Huron, due to ice, is 10,000 cubic feet per second. The correction for Lake Superior is 700 cubic feet per second, for Lake Erie 1,500 cubic feet per second, and for Lake Ontario 4,400 cubic feet per second.

WINDS

The temporary effect of winds on lake levels is of considerable importance locally. A sudden shift in the direction of the wind can change the level of any of the Great Lakes, at a given point, as much as 1 foot in an hour. Such a change as this, only 1 foot, is of no particular importance, but the effect of a strong wind blowing for a long time from one direction can be sufficient to cause considerable damage.

Lake Erie is particular susceptible to wind effects, because of its relatively shallow depths and because its greatest length lies in the general direction of the strongest winds.

The most extreme levels reached at the two ends of Lake Erie occurred in a storm January 10, 1889. The maximum wind, measured at Buffalo, was 55 miles per hour. The water level at Toledo dropped 7.1 feet and at Buffalo it rose 8.2 feet, total difference in water level between the two ends of Lake Erie 15.3 feet.

In a severe gale October 14, 1893, the lake level at Amherstberg, Ontario, fell 5 feet and at Buffalo it rose 5.3 feet, making a difference of 10.3 feet between the two ends of the lake. In this storm the level at Buffalo fluctuated 8.1 feet, from −2.8 to +5.3 on the gage.

Records of a 3-foot rise at one end of Lake Erie and a 3-foot drop at other, total difference in level 6 feet, have been frequent. Such changes occurred about six times per year, from 1886 to 1895.

Windstorms on Lake Michigan have not caused such violent changes in lake level as on Lake Erie, but their effect has been considerable. Three cases will be cited.

On October 21, 1929, a north wind steadily increasing from 15 miles per hour to 38 miles per hour raised the lake level at Chicago 0.70 foot in 24 hours. This wind, continuing from the north and increasing in velocity from 38 miles per hour to 58 miles per hour over the next 15 hours, raised the local lake level an additional 1.25 feet. The total rise was 1.95 feet (from +1.60 CCD to +3.55) in 37 hours. As this wind, still from the north, subsided from 58 miles per hour to 20 miles per hour over a period of 18 hours, on October 23, the lake level at Chicago dropped 1.05 feet, from its maximum height.

On December 17, 1929, a north wind shifting to the northeast and increasing from 15 miles per hour to 50 miles per hour, over a time period of 34 hours, raised the lake level at Chicago 1.80 feet (from +1.20 to +3.00 CCD). As this wind subsided and changed direction from northeast to northwest and finally to west, over a time period of 45 hours, the lake level dropped 3 feet by December 20.

On November 6, 1951, an east wind at 17 miles per hour, shifting to northeast and then north and increasing to 42 m. p. h., over a time period of 31 hours, raised the lake level at Chicago 1.70 feet from +1.70 to +3.40 CCD) by 8 a. m. November 7. As this wind, still in the north, subsided over the next 24 hours, to 9 m. p. h., the lake dropped 1.10 feet. In the following 12 hours the wind shifted from the north to the south and increased to 23 m. p. h.; and the lake level dropped an additional 0.8 foot. The total drop in 36 hours was 1.9 feet (from 3.40 to +1.50 CCD). These changes were caused by continual steady, but not extremely strong, winds.

Tides

True tides, both lunar and solar, occur on the Great Lakes and were observed and studied many years ago by Col. J. D. Graham and Gen. C. B. Comstock. Investigations of the United States Coast and Geodetic Survey indicate that the spring (combined lunar and solar) tide is less than 2 inches. Other records indicate a lunar tide of 1¾ inches and a spring tide of 3½ inches at Chicago; also a lunar tide of 1 inch at Milwaukee and a spring tide of 1¾ inches at the west end of Lake Superior. Such small fluctuations as 1 to even 3 inches, because of tides, are of small consequence in lakes subject to 10 or more times as much fluctuation by winds.

Seiches

Seiches are sudden brief changes in a local lake level, caused by quick changes in atmospheric or barometric pressure. Such changes are due to the passing of a barometric wave or a wave of low atmospheric pressure over the region where the seiche occurs. An inch of mercury is equivalent to a foot of water in resist-

ance to pressure; and the passing of a storm center with a barometer reading an inch below normal has the same effect as reducing the water pressure a foot. When such a phenomenon occurs at one end of a lake, the water surface there will rise, due to the lessened atmospheric pressure at the time of passing. The opposite end of the lake is necessarily subject to higher relative atmospheric pressure and the water surface there will fall. An oscillation is thus set up, which continues with gradually diminishing amplitude until the seiche is ended and the water is returned to its normal level.

Seiches, with as much as 4.5 feet variation in water surface level, are not unusual in Lake Michigan, though infrequent. In this unpredictable movement the surface of calm water will rise as much as 2 feet or more, then within 20 to 30 minutes swing back down till it is 2 feet or more below the original level. Thereafter the water level will oscillate in 20- to 30-minute cycles, over a gradually diminishing amplitude, until the water has returned to its original level, usually in about 4 hours.

A great seiche was observed along the west shore of Lake Heron, between Alpena and Cheboygan, Mich., May 22, 1925. About an hour before this occurred a thunderstorm, attended and followed by sharp changes in barometric pressure, moved rapidly from west to east, the line of its passage being north of Rockport. At Rockport the lake surface rose 5 feet in 6 minutes and then dropped as rapidly as it rose to a point 3 feet below its original level; total range 8 feet. This change in lake levels was followed by oscillations of gradually diminishing amplitude and apparently irregular time period. At Calcite, Mich., the water rose 4 feet above and then fell 5 feet 4 inches below the original level, making a total range of 9 feet 4 inches.

Seiches have not occurred with the passage of every storm, and they have occurred many times in fair weather when there was no other indication of any atmospheric disturbance. Seiches have probably occurred in many storms, when the wind effects have been sufficient to mask any change due to change in barometric pressure.

EARTH TILT

Considerable evidence exists that the earth's crust in the Great Lakes region is gradually tilting, rising to the north of an axis, or hinge line, which extends west, about 20° north approximately through Port Huron, Mich., and is subsiding at some points south of this line. This phenomenon has been studied by geologists and others for more than 60 years.

As far back as 1890 Dr. Grove Carl Gilbert recommended to the United States Lake Survey and to the United States Coast and Geodetic Survey that an investigation be made to determine if tilting was taking place and, if so, at what rate. No action was taken, but Dr. Gilbert studied the matter further for the United States Geological Survey. It was also studied by Frank B. Taylor and the results stated in a monograph published 1915 by the United States Geological Survey. It has been studied by Professor Hobbs, of the University of Michigan, and by Sherman Moore, of the United States Lake Survey.

John R. Freeman, in his report, 1925–26, on the Regulation of the Great Lakes, studied all the data available on this subject and came to the definite conclusion that earth tilt is still taking place; that harbor depths in the Lake Superior region are decreasing from this cause at the rate of about 1 foot per 100 years; and that harbor depths at Chicago and Cleveland are increasing substantially but at a lesser rate.

Freeman concluded that since this movement had been going on slowly for more than 20,000 years, it was likely to continue for another 1,000 years, by which time the problem of keeping the water of the Great Lakes from flowing across the divide at Chicago into the Mississippi Basin might become serious.

WATER YIELD OF THE GREAT LAKES

Artificial changes in the levels of the Great Lakes include changes in the lake outlets which in most cases permit the discharge of more water than would have been the case if each of these outlets had been left in its natural state. To analyze the effect of outlet changes it is necessary to know the quantities of water supplied to each of the lakes and discharged through these outlets.

The calculation of the amount of water supplied to any one of the Great Lakes, other than the inflow from the lake next above, and designated as the "water yield" or local supply of that lake, is a long and tedious process. Computing it by the run-off method involves the rainfall on the drainage area, which is slightly different on the water surfaces and on the land areas, as well as having consider-

able seasonal variations. It also involves evaporation from the water surface, with wide seasonal variations; also evaporation from the land and transpiration from vegetation.

Annual average precipitation is approximately 28 inches in the Lake Superior region, about 31 to 32 inches for Lake Michigan and Huron, about 33 to 34 inches for Lake Erie, and about 34 inches for Lake Ontario.

Annual average precipitation and reasonable estimates of evaporation, transpiration, etc., in inches per year, and the water yield of the various lakes based upon the same, for the 65 years, 1860 to 1924, are indicated to the tabulation following:

	Lake Superior	Lakes Michigan-Huron	Lakes St. Clair-Erie	Lake Ontario
Precipitation	28	31-32	33-34	34
Evaporation from water surfaces	22	28	36	33
Evaporation from land and transpiration from vegetation	14	22	24	23
Annual runoff in inches, from entire drainage area	10.7	8.4	7.3	7.9
Area of watersheds, in square miles	80,700	141,600	41,100	34,600
Runoff, c. f. s. per square mile	0.943	0.745	0.644	1.088
Water yield, c. f. s.	76,000	105,400	26,500	37,700
Flow of Niagara River, c. f. s.		207,900		

These were the figures adopted by the engineering board of review of the Sanitary District of Chicago, in 1925, and used by John R. Freeman, in his report on the Regulation of the Great Lakes, 1926.

Another method of computing the water yield of the Great Lakes was that used by the International Waterways Commission in its studies of the Regulation of Lake Erie, report made 1910 (H. Doc. 779, 61st Cong., 2d sess.). In this method the water yield, by months, is determined by deducting the inflow to the lake from the discharge of the lake and adding the storage accumulated in the lake in that month, if the level rises; or subtracting the amount of storage lost, if the level drops. In brief the

Water Yield=Discharge—Inflow±Storage

This Commission computed the supply factors for all the Great Lakes, by months, for the period 1860 to 1907. Lake St. Clair was included in the Michigan-Huron area. The average water yields of the lakes and discharges of the outlet streams, for the 48 years, 1860–1907, were as follows:

	Cubic feet per second
Lake Superior (St. Marys River)	82,000
Lakes Michigan-Huron-St. Clair	122,200
Detroit River	204,200
Lake Erie	8,000
Niagara River	212,200
Lake Ontario	42,200
St. Lawrence River	254,400

The average monthly water yield of Lake Superior ranged between 175,700 cubic feet per second and negative 10,700 cubic feet per second, the minus value being in December and indicating that evaporation from that lake may be greater than precipitation on the lake surface and runoff from its tributary watershed.

The mean monthly local supply to Lakes Michigan-Huron ranged between 257,800 cubic feet per second in May and 8,200 cubic feet per second in October.

The mean monthly local supply to Lake Erie ranged between 56,100 cubic feet per second in April and negative 31,800 cubic feet per second in October. In the 6 months, July to December, the evaporation from the surface of Lake Erie has exceeded the precipitation on the lake surface and the runoff from the tributary watershed.

These conclusions of the International Waterways Commission in 1910 as to the water yield of the Great Lakes, 1860 to 1907, were not much different from conclusions of Freeman, Horton, Grunsky, and others, on the engineering board

of review of the Sanitary District of Chicago in 1925. One hydraulic engineer, E. E. Haskell, was a member of both commissions. Some of these later conclusions are cited.

In the average year of the 25-year period, 1900 to 1924, the water yield from the local drainage of Lake Superior was negative in the winter months—December, January, February—due to evaporation and to ice clogging the tributary streams.

In the same period the average water yield of the Lakes Michigan-Huron drainage area was negative, to a small extent, in the month of November, due to evaporation and lessened stream inflow.

In the same 25-year period, the water yield from the local drainage of Lake Erie was negative, as an average, in the autumn months of September, October, November—due to excessive evaporation.

For the entire year the rainfall on the water surfaces of the Great Lakes exceed the evaporation by about 4 inches. The rain is heaviest in the spring months and the evaporation greater in later summer and fall; and this is one reason for the spring rise and autumn lowering of lake levels.

Annual evaporation of 27 inches from the 95,100 square miles of lake surface is equivalent to an annual average of 188,000 cubic feet per second, which is equal to about 80 percent of the flow of the St. Lawrence River.

In the 3 months, August to October, it is probable that more water evaporates from Lakes Superior, Michigan, Huron, and Erie than flows through Niagara River.

The United States Lake Survey, in its Bulletin No. 59, April 1950, Survey of Northern and Northwestern Lakes, gives figures for the water yield of the various lakes and discharge of their outlet rivers for the 50-year period 1900 to 1949, as follows:

	Cubic feet per second
Lake Superior (St. Marys River)	71,500
Lakes Michigan and Huron	103,100
St. Clair River	174,600
Lakes St. Clair and Erie	19,300
Niagara River	193,900
Lake Ontario	36,100
St. Lawrence River	230,000

The International Joint Commission, in its report on the pollution of boundary waters, 1951, figured the average flow of the Niagara River for the 90-year period, 1860 to 1949, at 202,000 c. f. s.

Comparative figures for discharge of the Niagara River are as follows:

	Cubic feet per second
48 years, 1860 to 1907, International Waterways Commission	212,200
65 years, 1860 to 1924, Freeman, Horton, Grunsky	207,900
90 years, 1860 to 1949, International Joint Commission	202,000
50 years, 1900 to 1949, Lake Survey	193,900

At first glance these figures may not appear consistent, but the differences are easily explained. The first period, 1860 to 1907, included the extremely wet years around 1861, 1876, 1886, and the fairly wet years near 1907. The second period, 1860 to 1924, included all the wet years of the first period, plus the dry years 1917 to 1924. The third period, 1860 to 1949, included all of the preceding, plus a few wet years around 1929 and many dry years in the 1930's and early 1940's. The last period, 1900 to 1949, excluded all the extremely wet years around 1861, 1876, 1886, and included only two fairly wet periods around 1907 and 1929.

At any rate the local water supplied to the various lakes and the water discharged therefrom may be taken, in round numbers, as follows:

	Cubic feet per second		
Lake Superior (St. Marys River)	72,000	to	75,000
Lakes Michigan and Huron	103,000	to	105,000
St. Clair River	175,000	to	180,000
Lake Erie	20,000	to	25,000
Niagara River	195,000	to	205,000

	Cubic feet per second
Lake Ontario	36,000 to 38,000
St. Lawrence River	231,000 to 243,000

The records do show that in the 90 years of which records are available the average levels of the last 50 years are less than the averages of the earlier 65-year period, and the fall between the various lakes has changed as follows:

	1860–1924	Average decrease	1900–1949
	Feet	*Feet*	*Feet*
Elevation Lake Superior	602.3	0.1	602.2
Fall to Lake Huron	21.2		22.4
Lakes Michigan and Huron	581.1	1.3	579.8
Fall to Lake Erie	8.6		7.8
Lake Erie	572.5	.5	572.0
Fall to Lake Ontario	326.3		326.2
Lake Ontario	246.2	.4	245.8

CHANGED OUTLET CONDITIONS

The most important artificial effect on lake levels is that due to changed outlets. Enlarging an outlet will increase the discharge and lower the level of the lake above. Obstructing an outlet will lessen the discharge and cause a rise in the level of the lake above.

The outlet of Lake Superior in the St. Marys River, in which, rapids about one-half mile in length and dropping about 19.5 feet connect the upper and lower river. The submerged natural rock weir at the head of the rapids controlled the discharge from Lake Superior.

Changes in this outlet include a power canal and navigation lock on the Canadian side, in the rapids; and 4 navigation locks and a power canal constructed on the Michigan shore. These power canals have a combined discharge capacity of more than 50,000 cubic feet per second and the locks use about 1,000 cubic feet per second. Another powerplant has been built in the rapids, on the Michigan side, and part of the original channel at the head of St. Mary Rapids has been permanently blocked. The net result of these changes is an increase of perhaps 25 percent in the discharge capacity of the outlet, all of it being subject to manual control.

The extensive diversions of water for power purposes at St. Marys Falls, most of it through additional outlet channels (later amounting to approximately 50,000 cubic feet per second by 1925) made it necessary to construct control gates (sluice gates) accross the rived at the head of the rapids to control the level of Lake Superior. These 16 gates have been in full service since 1917 and it has been possible to control the discharge from Lake Superior within very narrow limits.

The International Joint Commission, May 1914, fixed the desirable limits for the level of Lake Superior at 602.1 feet above mean sea level, as minimum, and 603.6 as maximum, a range of 1.5 feet. Due to the continuing deficient water yield in the dry period 1917 to 1925 it was impossible to hold the level above the desired minimum stage in the years 1918 to 1927, but since that time these regulating works have been reasonably effective. Fluctuations of the Lake Superior water level have been held within the prescribed range of 1.5 feet, monthly average, except for a few instances in the winter and early spring months.

The joint board of engineers on St. Lawrence Waterway project, report November 16, 1926, concluded that the operation of the Lake Superior regulating works had affected somewhat the levels of the other lakes; that the retention of water in Lake Superior had lowered the level of Lakes Michigan-Huron about 4½ inches and Lakes Erie and Ontario 3 inches, by 1922–23; but that the release of surplus stored water from Lake Superior 1923 to 1925 had raised the lower lakes so that by January 1926 their levels were slightly higher than they would have been with no regulation of Superior.

In the regulation of Lake Superior, the effort is made to have the level near but not below the minimum stage of 602.1 about February–March, and near but not above the maximum stage of 603.6 by about August–September. In November 1951 the level was 603.4 and in December it was 603.1, indicating the im-

probability of the desirable low level being approached in 1952, without abnormal discharge from Lake Superior.

The outlet of Lake Huron is the St. Clair River, which has a sand and gravel bed, and which at the entrance from Lake Huron is contracted in a deep and narrow channel, known as the Port Huron Rapids, for a distance of about 8,000 feet; and in which the water current is 4 to 5 miles per hour. This is the principal control point for the discharge from Lake Huron, although other secondary control reaches were the shallow natural depth in Lake Huron at its approach to the outlet, the delta of the St. Clair River in Lake St. Clair, the shallow bay at Grosse Point where Lake St. Clair empties into the Detroit River, and the shoals in the lower Detroit River.

Considerable changes in the cross sections of the streams have been made at all of these critical or control points, most of which have increased the discharge capacity.

The natural depth in Lake Huron at the approach to the St. Clair River was 16 to 18 feet. A channel 2,400 feet wide and 21 feet deep was dredged across this shallow reach, 1893 to 1896. This dredging extended into the St. Clair River, where a channel was cut 300 feet wide, to the same depth. A later improvement, by 1950, provided a channel 800 feet wide and 26 feet deep through the 4.8 miles of this shoal area.

Records indicate that between 1890 and 1900, the discharge capacity of the St. Clair River increased to an extent sufficient to lower the level of Lake Huron 0.34 foot. This has been ascribed to natural erosion of the gravel bed of the river, through the Port Huron Rapids. Such erosion was probably promoted by the dredging in Lake Huron, above, and in the St. Clair Flats, below. Shoaling caused by the wrecks of two schooners in the rapids in 1900 reduced this lowering to 0.24 foot.

After 1908 certain licensees of the Province of Ontario, Canada, dredged gravel from the channel at the foot of the Port Huron Rapids, to improve navigable depth to the Point Edwards docks. The amount removed was presumed to be about 1,500,000 cubic yards, but a survey made in 1925 disclosed that dredging had been carried on by these licensees and others to such an extent as to materially enlarge the cross-section of the river through a distance of about 6,000 feet. Through about one-half of this distance, the enlargement was more than 30 percent of the original area. About 2,400,000 cubic yards of material had been removed. The increase in discharge of the St. Clair River, because of such enlargements, was sufficient to permanently lower the level of Lake Huron an additional 0.29 foot.

Due to these two changes, increases, in the cross-section of the St. Clair River, in the critical control reach, the joint board of engineers on the St. Lawrence Waterway project, 1926, concluded that the levels of Lakes Michigan-Huron had been permanently lowered about 0.60 foot.

By 1950 the American side of this river, used by downbound traffic, had been improved to a depth of 25 feet, for a width of 1,000 feet. The Canadian side, used by upbound traffic, had depths of 21 feet or more.

The outlet from Lake Huron was also increased by the Black River Canal, but its effect on the lake level has been small. This canal, about 35 feet wide and 6 feet deep, extends from the west shore of Lake Huron at a point about 1½ miles north of the foot of the lake, westward a little more than a mile to connect with Black River. This river flows south through Port Huron, receives the sewage of a large part of this town, and discharges into the St. Clair River at a point about 2½ miles below the foot of Lake Huron. The average amount of water diverted from Lake Huron, through this additional outlet, has been 400 c. f. s., sufficient to lower the lake level about one-fourth inch, a lowering which has been generally disregarded.

Originally the St. Clair River emptied into Lake St. Clair through seven principal channels across the delta, known as the St. Clair Flats. Water depths at the outlet ends of these channels ranged from 2 to 6 feet. The St. Clair Flats canal was dredged across this delta 1867–71, to 300 feet width and 13 feet depth; and improved from time to time until, by 1906, there were 2 channels, each 300 feet wide and 20 feet deep.

Lake St. Clair empties into the Detroit River through an outlet bay at the southwest corner of the lake at Grosse Point. Under natural conditions the water in this outlet bay was 14 to 16 feet deep over a length of 3 miles. The Grosse Point canal was cut through this shoal area, 800 feet wide and 20 feet deep, 1893 to 1897; deepened to 21 feet by 1921.

By 1950, the St. Clair Flats canal had been widened to a channel 700 to 1,000 feet wide and at least 25 feet deep; and this channel continued 700 to 800 feet wide across Lake St. Clair, which was originally only 21 feet deep; and on through the Grosse Point canal to the Detroit River.

The improvement of the lower reaches of the Detroit River, for navigation, has been almost continuous since 1876. The shallowest place was at the Limekiln Crossing, just upstream from the village of Amherstburg, Ontario, where the natural water depth was 13 to 15 feet. Another shallow place was at Ballard's Reef, a little farther upstream.

Beginning in 1876, a channel 300 feet wide and 20 feet deep was cut across the Limekiln Crossing. The Amherstburg channel was extended and enlarged from time to time until it was 800 feet wide and 22 feet deep, from Ballard's Reef to Lake Erie, by 1920. This channel is used for up-bound navigation.

The Livingston channel, for down-bound navigation, to the west of the Amherstburg channel, was dug 22 feet deep and 300 to 800 feet wide, 1908 to 1912. The width of the major portion was increased from 300 feet to 450 feet, 1921 to 1925. The depth was increased to 20 feet by 1950.

A channel 800 feet wide and 21 feet deep was cut through the shoal at the mouth of the Detroit River, 1896 to 1897. This was widened to 1,200 feet and deepened to 26 feet by 1950.

It has been claimed that the material excavated from these channels, particularly in the Detroit River, was so placed as to form obstructions to flow in the river which would be equivalent to the increased discharge capacity resulting from the improved navigation channels. This is probably true for the work subsequent to about 1900.

It is a fact that the levels of Lakes Michigan-Huron dropped, 1886 to 1895–96, about 3.5 feet, as computed from annual average levels; and that the levels since that time, even in the high years of 1929 and 1951, have not risen within 1 foot of the high levels of 1860–61, 1876, and 1886. In other words, since the improvements for navigation in the Detroit and St. Clair Rivers, the levels of Lakes Michigan-Huron have been fluctuating in a plane about 1 foot lower than before substantial progress had been made on these improvements. Of this, some 0.60 foot was due to erosion and dredging in the St. Clair River.

Niagara River is the natural outlet of Lake Erie. The principal control of flow from the lake was a group of rock reefs: Limekiln, Bird Island, and Horseshoe Reefs, at the head of the river, where it was about 1 mile wide. Water depths were 9 feet over Bird Island Reef. About a mile downstream, opposite Fort Erie, the river is contracted to about 2,000 feet width, with an original maximum depth of 20 feet. This section used about 40 percent of the average slope of the river from Lake Erie to Niagara Falls and served as a natural throttle and control for the outflow from Lake Erie.

The principal change in this outlet was the construction of the Black Rock Canal along the New York shore, water depth 21 feet, width 200 feet to 350 feet. Excess flow of 1,000 cubic feet per second through this added outlet has had the effect of lowering Lake Erie 0.05 foot, or about $\frac{5}{8}$ inch. This has lowered Lakes Michigan-Huron about one-fourth as much or approximately $\frac{1}{8}$ inch.

The Welland Canal provides an additional outlet for Lake Erie. Flow of approximately 3,100 cubic feet per second through this canal, about 1925–26, had the effect of lowering the level of Lake Erie 0.15 foot, or about $1\frac{7}{8}$ inches. The new Welland Canal, now in service, with larger locks, probably requires 5,000 cubic feet per second or more for lockage, etc., and its lowering effect on Lake Erie is about 0.25 foot, or 3 inches.

The taking of water from Niagara River, above the Falls, for power purposes through canals and conduits which are additional outlets, has a slight lowering effect on Niagara River. This occurs, however, at points so far downstream from Lake Erie that the effect on the level of Lake Erie is not appreciable.

The outlet of Lake Ontario is the St. Lawrence River, which flows through the wide Thousand Islands section and on through a deep unobstructed reach, a total distance of about 66 miles, to the head of the Galops Rapids, which is the natural control section for the outflow from Lake Ontario. At this point the St. Lawrence River is divided into two channels, by Galops Island in midstream and Adams Island, a small island near the northwest corner of Galops Island. The channel on the American side is relatively shallow, the rapids steep, with heavy swells, making navigation impossible. The Canadian channel is deep and is used by downbound vessels. Upbound vessels of course use the Galops ship canal, locking up about 16 feet around the rapids. Discharge through the narrow

passage between Galops Island and Adams Island, known as the Gut, introduced a strong crosscurrent into the navigation channel. In 1903, the Canadians constructed a dam, of earth- and rock-filled cribs, across the Gut, to eliminate this crosscurrent.

Blocking of this narrow outlet channel caused the level of Lake Ontario to rise 0.56 foot, or almost 7 inches at mean stage. The rise was about 8 inches under the high-water conditions of 1951.

DIVERSION FROM THE GREAT LAKES

Diversions have had less effect on Great Lakes levels than any one of the several items which have caused measurable changes in these levels. The effect of diversions has been greatly overemphasized in the public mind because of the bitter controversy over the Chicago diversion and because of the immense amount of propaganda for and against this diversion over the past 30 years.

The effect of the diversion of 10,000 cubic feet per second from Lake Michigan at Chicago toward the lowering of the water levels of the Great Lakes was discussed before this society in 1888 by George Y. Wisner, who estimated the lowering effect at 2½ to 3¾ inches. In the same year, Lyman E. Cooley estimated it at 2½ to 4¾ inches. In October 1894, T. T. Johnston, assistant chief engineer of the Sanitary District of Chicago, the man who was really responsible for the design of the Chicago Drainage Canal, in a paper before the Western Society of Engineers, concluded that the lowering would be slightly less than 6 inches.

Thereafter various engineers and commissions from time to time reported on the lowering effect of a 10,000 cubic feet per second diversion. Figures from Lakes Michigan-Huron only will be listed. The effect on Lake Erie in all cases was estimated at about 1 inch less than on Michigan-Huron, and for Lake Ontario even less than Erie. Most of these estimates were:

1895. Poe, Ruffner, Marshall	feet	0.61
1896. J. L. P. O'Hanley	do	.55
1899. Marshal	inches	3–8
1905. Ernst, Bixby, Casey	do	6
1907. International Waterways Commission	feet	.52
1909. Noble, Sabin, Shenehon, Wheeler, Keller	do	.52
1913. Bixby, Townsend, Keller, Cavanaugh, Bogart	do	.47
1919. Warren, Richmond (8,800 cubic feet per second)	do	.43
1925. Engineering Board of Review, checked the Warren Report figures.		
1926. Joint Board, St. Lawrence waterway	feet	.50
1927. Special Master, Charles Evans Hughes	do	.50

The outlet rivers of the various Great Lakes have been carefully calibrated by repeated current-meter measurements over many years and their increments of discharge determined within acceptable limits. The increment of discharge is the increase in discharge, in cubic feet per second, due to an increase of 1 foot in the stage of the river.

Since the discharge curve for each of these large rivers is a flat curve closely approaching a straight line at the higher stages, it follows that the increment for low stage is less than the increment for mean stage, which in turn is less than the increment for high stage.

Increments of the outlet rivers, the low stage being 1.5 feet below and the high stage being 1.5 feet above the mean stage, are substantially as follows:

Stage	St. Clair	Niagara	St. Lawrence
	Cubic feet per second	*Cubic feet per second*	*Cubic feet per second*
High	20,800	23,000	23,700
Mean	20,000	21,800	22,700
Low	19,200	20,600	21,600
Mean stage	581.1	572.3	246.0

The actual diversion of water from Lake Michigan at Chicago, by decades, and the lowering of Lakes Michigan and Huron at the end of each of these

periods (based on an increment of 20,000 cubic feet per second for the St. Clair River) has been as follows:

	Diversion	Lake lowerings
	Cubic feet per second	
1900–10	5,069	0.25 foot=3 inches.
1911–20	7,992	0.40 foot=4¾ inches.
1921–30	8,745	0.45 foot=5⅜ inches.
1931–40	6,664	0.33 foot=4 inches.
1941–50	3,113	0.155 foot=1⅞ inches.
1951	3,106	0.155 foot=1⅞ inches.

The diversion since January 1, 1939, has been limited to 1,500 cubic feet per second, annual average, in addition to domestic pumpage.

The effect of diversion of water from a large lake, such as Michigan-Huron, is by no means instantaneous. Considerable time, measured in years, is required for the readjustment of lake levels due to a given diversion. The lowering of the lake lessens its rate of discharge through its natural outlet very slowly and 5 to 10 years' time is required to establish equilibrium under the altered conditions, when the full effect of the diversion has been reached.

The lowering of Lakes Michigan-Huron, due to diversion of water, has been figured by the method of successive approximations and the percentage of the ultimate lowering is substantially as follows:

End of—	*Percent*	End of—	*Percent*
First year	40	Fifth year	94
Second year	65	Sixth year	96
Third year	80	Seventh year	97
Fourth year	88		

For all practical purposes the effect of the diversion is reached in about 5 years, when about 95 percent of the lowering has been accomplished.

In the Warrent report (p. 362) the statement is made that on Lakes Michigan-Huron, because of their great area, about 4 years' time is required to effect 90 percent of a change in level, and 10 months to achieve 32 percent of such change. On Lake Erie, however, because of its relatively small area, about 93 percent of such a change is effected in 10 months.

At first glance, such times may seem very long, but the area of Lakes Michigan-Huron, 45,400 square miles, is so great that storage in the same to a depth of 6 inches would contain sufficient water to provide a flow of 10,000 cubic feet per second for 24 months, or 2 years. Storage to a depth of 6 inches on Lake Superior, 31,800 square miles, would supply a flow of 10,000 cubic feet per second for 17 months. The water accumulated in Lakes Michigan-Huron in the last 2 years of rising stage, 3.3 feet, from December 1949 to December 1951, has been sufficient to provide a flow of 10,000 cubic feet per second for 13½ years.

Diversion of water from Lake Michigan at Chicago is the only instance of diversion from the Great Lakes watershed into a different drainage basin. Its maximum effect, attained in 1929, was the lowering of the level of this lake almost 6 inches. Its present effect is a lowering of about 1⅞ inches. The Chicago Drainage Canal is an additional lake outlet, with discharge capacity about 5.2 percent of the capacity of the St. Clair River.

Diversion of water from Lake Erie through the Welland Canal into Lake Ontario is another case where an additional lake outlet is used, but where the water is returned to the Great Lakes system. The level of Lake Erie was lowered about 1¼ inches by an authorized diversion of 2,050 cubic feet per second through this canal, for power purposes, and an additional ⅝ inch by diversion of 1,050 cubic feet per second for navigation (1926), total lowering 1⅞ inches. Since the opening of the new (present) Welland Canal, with increased diversion for navigation, the lowering of Lake Erie caused by diversion through this additional outlet has been about 3 inches. The effect of this on the levels of Lakes Michigan-Huron has been about one-fourth as much, or approximately ¾ inch.

DIVERSIONS INTO THE GREAT LAKES

Diversion of approximately 5,000 cubic feet per second annual average, of water from the Hudson Bay watershed into Lake Superior, has caused an average rise of about 3 inches in the levels of all the Great Lakes. The Hydro Electric Power Commission of Ontario completed works July 1939 for the diversion of the drainage from 1,630 square miles around Long Lake, Canada, and July 1943 for the diversion of the drainage from 5,545 square miles of the Ogoki River watershed into the Great Lakes. By international agreement, this water or its equivalent is used through Canadian powerplants at or near Niagara Falls. This is an addition to any other allocation of the waters of Niagara River for power purposes between the United States and Canada.

The annual average diversion into the Great Lakes system has been about 1,000 cubic feet per second from the Long Lake area, since 1939, and about 4,000 cubic feet per second from the Ogoki River, since 1946. The actual record of these diversions into Lake Superior has been as follows:

	Cubic feet per second		*Cubic feet per second*
1945	4,202	1948	5,102
1946	6,224	1949	(1)
1947	5,142	1950	5,473

[1] Record missing.

The average of the 5 years on record is 5,228 cubic feet per second. This diversion was discontinued temporarily May 4, 1951, because of impending high-water levels in the Great Lakes.

SUMMARY OF CHANGES IN LAKE LEVELS

Changes in the levels of Lakes Michigan-Huron, due to artificial causes, as computed by the Joint Board of Engineers on St. Lawrence Waterway Project in 1926, and for 1951 figures on the same basis, have been as follows:

		1926	1951
Diversions:			
Chicago drainage canal	inches	6	1⅞
Welland Canal	do	½	¾
Black Rock Canal	do	⅛	⅛
Lowering, by diversions	do	6⅝	2¾
Rise, by diversions into Lake Superior	do		3
Net change by diversions	do	−6⅝	+¼
Outlet changes: St. Clair River enlargement	do	−7¼	−7¼
Total lowering, artificial causes:			
Inches		13⅞	7
Feet		1.15	0.60

The Engineering Board of Review of the Sanitary District of Chicago concluded that the retention of water in Lake Superior from 1911 to 1923 had lowered the levels of Lake Michigan-Huron 3 inches by 1924, and that the low-water yield of these lakes and Superior, 1919 to 1923, had caused a further lowering of 13 inches. This 16 inches added to the approximate 14 inches of lowering, due to diversions and outlet changes, represented a total lowering of about 30 inches in 1924–25, the time of record low-lake levels. The Joint Board of Engineers on St. Lawrence Waterway Project concluded that the retention of water in Lake Superior had reduced the levels of Lakes Michigan-Huron some 4½ inches by 1922–23, but that this had been restored by 1926. The total lowering as computed by this board was thus about 18⅜ inches from artificial causes in 1922–23.

Artificial changes in the levels of Lake Erie in 1926 and 1951 have been as follows:

	1926	1951
Diversions:		
Chicago Drainage Canal, inches	4¾	1⅝
Welland Canal, do	1⅝	3
Black Rock Canal, do	⅝	⅝
Lowerings, by diversions, do	7¼	5¼
Rise, by diversions into Lake Superior, do		2½
Total lowering, artificial causes:		
Inches	7¼	2¾
Feet	0.60	0.23

COMPENSATING WORKS

The joint board, in 1926, assumed that the new Welland Canal would soon be in service and Lake Erie lowered thereby an additional 0.10 foot to a total of 0.70 foot. This board, not contemplating any reduction in the Chicago diversion and ignoring the possibility of the diversions of water into Lake Superior, recommended compensating works to raise the levels of Lake Erie 0.70 foot and Michigan-Huron 1 foot. The estimated construction cost was $3,400,000.

REGULATING WORKS

Regulation of the levels of the Great Lakes has been under consideration for the past 55 years. Regulating works for Lake Erie were recommended by the Deep Waterways Commission (Angell, Cooley, Russell) in 1896.

The Board of Engineers on Deep Waterways (Noble, Raymond, Wisner) reported in 1900, recommending regulating works for Lake Erie for the benefit of navigation only.

The regulation of Lake Erie was studied by the International Waterways Commission in 1910. The conclusion was reached that the levels of Lake Erie could be held between elevation 572.0 and 574.5, a range of 2.5 feet, and that the low-water stages of Lake Erie could be raised about 1 foot and those of Lake Michigan about 0.27 foot, without increasing the high-water stage in any case. The Commission concluded that the advantages were not sufficient to justify the construction of regulating works, composed of a dam and sluice gates near Buffalo.

The International Waterways Commission reported in 1913, recommending construction of a submerged weir diagonally across the Niagara River a short distance above the Falls, to raise the river level there 3 feet and by backwater to raise Lake Erie 4¾ inches. This was compensation instead of regulation.

Francis C. Shenehon, 1919, proposed plans for complete regulation of Lake Erie and Lake Ontario and the budgeting of the flow from these lakes. His proposal was to raise the average level of Lake Erie 13 inches, but not increase any flood stages; to equalize the discharge from the lake; and to hold the levels between elevations 572 and 574. The proposals for Lake Ontario were similar.

John R. Freeman, in 1926, recommended construction of regulating works in the St. Clair River, for Lakes Michigan-Huron, and in the Niagara River, for Lake Erie, giving complete regulation of the discharge from the upper lakes. He stated that the water levels of the several lakes could be maintained 2 or 3 feet higher than the low levels existing in 1925 to the great benefit of navigation; and that minimum discharge from the lakes could be increased at least 20,000 cubic feet per second to the considerable benefit of power at Niagara and below. Levels of Lakes Michigan-Huron were to be held within a range of 2.5 feet and those of Erie within a range of 1.5 feet.

The Joint Board of Engineers on St. Lawrence waterway project, 1926, studied the regulation of the Great Lakes. A minimum discharge of 176,000 cubic feet per second out of Lake Erie was assumed and controlled discharge compared with actual discharge for the years 1894 to 1925, inclusive. The studies indicated

that with regulation the levels of Lakes Michigan-Huron could have been held within a range of 2.4 feet, compared to the natural range of 3.5 feet, a gain of 1.1 feet, by control. On Lake Erie the levels could have been held within a range of 2.8 feet, compared to the natural range of 3.3 feet, a gain of 0.5 foot. The cost of regulating works was estimated at $36,400,000. It was estimated that the same increases in depths of lake-connecting channels and harbors could be obtained by compensating works and by dredging at a cost of $13,400,000. The conclusion was that construction of regulating works for the benefit of lake navigation could not be economically justified.

DIVERGENT INTERESTS

Three divergent interests are concerned about the levels of the Great Lakes; namely, navigation, water power, and riparian owners. Of these three interests, navigation is paramount. The Board of Engineers for Rivers and Harbors stated, in the Warren report, 1920:

"Navigation, whether in artificial canals or in open water, is of higher value and importance than any other end served by the water of the Great Lakes."

Navigation is benefited by high lake levels because of the deeper draft for boats. Water power is helped by the highel lake levels, which indicate greater discharge. Only the riparian owner is damaged by high water or rather by the storms that occur in times of high water, and the riparian owner has little recourse.

VALUE OF WATER FOR TRANSPORTATION

W. S. Richmond, in the Warren report, 1920, in an analysis of the value of draft for lake navigation, concluded that the loss of 0.10 foot in navigable depth caused an annual loss of $590,00 to shipping in the Great Lakes.

Brig. Gen. Charles Keller, in a statement before the Foreign Relations Committee (H. R. 11871, 65th Cong., 2d sess.) estimated the annual loss from 1 inch of impaired draft on Lake Erie at $450,000 to $600,000.

The Warren report (p. 93) contains the following statement relative to the value of water for transportation:

"The amounts by which the various lakes have already been lowered by existing diversions have been given (Michigan-Huron, 5⅝ inches; Erie, 9 inches; Ontario, 5 inches; St. Lawrence River, at lock No. 25, 7½ inches). The total loss to the bulk freight trade caused by this lowering is estimated at $4,713,000 per year."

If a lowering of 0.10 foot in lake levels represents an actual annual loss of $590,000 to navigation, then the lowering of Lake Erie 0.60 foot by artificial changes caused an annual loss of $3,540,000 in lake transportation. The estimated cost, 1926, of compensating works to restore this depth was $700,000 for Lake Erie and $2,700,000 for Lakes Michigan-Huron; total, $3,400,000. Since this is less than the claimed annual loss to navigation, it is difficult to understand why nothing constructive was done regarding compensating works subsequent to 1926 when their construction was recommended.

VALUE OF WATER FOR POWER

It was estimated in 1920 (p. 93 of Warren report) that the value of water for power, at Niagara Falls, was $500 per cubic foot per second per year, or about $25,000,000 per year for the five companies when operating at the falls and using about 50,000 cubic feet per second. At that time the most efficient plant was that of the Niagara Falls Power Co., using a net head of 208 feet and producing 20.3 horsepower from 1 cubic foot per second of water. New plants were contemplated to use a total head of 312 feet, including that of the Falls and of the rapids further downstream, and producing 29 horsepower from one cubic foot per second of water. The value of water for power, under this full head, was estimated at $824 per cubic foot per second per year.

In addition to the saving of money, there is the further value in the conservation of the coal supply of the Nation, and in the impetus which cheap power has given to the various electrochemical industries.

RIPARIAN RIGHTS

The opinion of the War Department was to the eeffct upon riparian interests of varied lake levels, as stated in the Warren report (p. 73) is as follows:

"In the sheltered waters of the Great Lakes the lowering of water levels works serious hardship to many of the riparian owners. In such places there are a

great many boathouses, dredged slips, and small private docks. These are built to suit the prevailing stages of the lake, and their value is much impaired at low stages. * * * The experience of the War Department has been that many more complaints are received because of low stage than because of high. It is believed that this matter of riparian interests constitutes but a very minor part of the problem of lake levels."

If riparian owners have been misled, by the low lake levels prevailing for several years past, into building structures on the foreshore which will be injured by a return to these higher lake levels produced by natural conditions in the past, they have done so at their own risk.

In Lake Michigan the high water of 1838 was elevation 584.7 feet above mean sea level. Later high monthly averages have been:

	Feet		*Feet*
August 1861	583.3	July 1929	582.3
July 1876	583.4	August 1951	581.6
June 1886	583.4	December 1951	581.6
July 1917	581.8		

Recent high levels have been lower than the high level of July 1929 which, in turn, was a foot lower than the high levels of 1861, 1876, 1886, and more than 2 feet below the high water of 1838. The high water in 1952 will probably exceed the high level of 1929 and may approach the high water of 1886. The reason, of course, is excess precipitation which was 31 percent above normal in the year 1951, being 39 percent above normal in December 1951 at Chicago; and expected to continue into 1952.

A contributing factor is the discharge of more than the normal amount of water from Lake Superior, to lower its high stage. In December 1951 the discharge from Lake Superior was at the rate of 121,000 cubic feet per second for the first 16 days and about 85,000 cubic feet per second thereafter, an average of 103,600 cubic feet per second for the month. The record discharge from Lake Superior for a month has been 127,100 cubic feet per second; and the average about 75,000 cubic feet per second. Apparently the levels of Lake Superior are being regulated with little regard to the level of the lakes below.

This abnormal discharge from Lake Superior in December caused Lakes Michigan and Huron to rise five-eighths of an inch above their November 1951 level, to a point one-fourth of an inch higher than the high summer level of August 1951. This is the first time in history that the December level of Lakes Michigan and Huron has exceeded the summer level in any year. While Lake Superior was being lowered about 3 inches, Lakes Michigan and Huron were raised five-eighths of an inch, Lake St. Clair more than 5 inches, Lake Erie 1¼ inches, and Lake Ontario remained about the same. Under natural conditions the levels of these lakes almost invariably dropped from November to December.

Nothing can be done about the high levels of Lake Michigan immediately. No more water than its present flow can be discharged through the St. Clair River and even this may be reduced by ice obstruction in such a cold winter as the present season. The only other outlet, the Chicago drainage canal, if used to its full discharge capacity, would lower the lake level about 4 inches more than at present in about 5 years, but only 1½ inches the first year. Even that, however, would help; but this serves to illustrate the small effect that diversions have had on lake levels.

The ultimate lowering which would be caused by the diversion of an additional 2,000 cubic feet per second, needed to produce a clean stream throughout the Illinois Waterway, would be only 1⅛ inches, of which about one-half inch would occur in the first year.

All diversions had lowered the levels of Lakes Michigan, Huron, and Erie by about 7 inches, at most, in 1926. Now (1952) the effect on Michigan and Huron is practically nil, and the lowering of Lake Erie less than 3 inches.

CONCLUSIONS

Little can be done about the temporary brief changes in lake levels due to natural causes such as winds and seiches. Tides are of no consequence. Little can be done about the retardation of inflow due to freezing of tributary streams, but the ice effects on the outlet channels could be reduced by the successful operation of ice breakers. Compensation for the slow, long-time effects of earth tilt can be effected by modification of the lake outlets, when and if a correction is desirable.

Changes because of diversions can be corrected by compensating works; but the present effect of diversions on Lakes Michigan-Huron is practically nil, and on Lake Erie only 2¾ inches of lowering. Compensating works would also correct outlet changes, which have been principally outlet enlargements.

No change is desired in the annual cycle, in which lake levels are about a foot higher in summer time than in winter. Navigation, the paramount interest, receives the benefit of increased channel depths during the navigation season, March to November.

The higher summer levels cause greater discharges in the warmer months; and power interests could make better use of larger discharges in the winter months. This desire of the power interests has been met in the recently ratified 1950 treaty between the United States and Canada, under which all the waters of the Niagara River, except 50,000 cubic feet per second, are authorized to be used for power purposes, from November 1 to March 31. In the daylight hours of the remaining 7 months of the year, the tourist season, 100,000 cubic feet per second is reserved by scenic beauty at Niagara Falls, but in the night hours only 50,000 cubic feet per second.

Changes in lake levels due to the long-time cycles of deficient, and of excess, rainfall cannot be eliminated but the amplitude of these changes could be reduced materially by the proper operation of regulating works for all the Great Lakes. Lake Superior is now regulated, and its outflow is subject to close manual control. Lake Ontario will become regulated when the first dam is built in the St. Lawrence navigation and power project. Only Lakes Michigan-Huron and Erie will remain unregulated. Regulating works for Lake Erie have been recommended many times, since 1900. Because of the relatively small area of this lake it is particularly susceptible to control. Changes in its level can be effected in a comparatively short time.

The remedy against excessive future high lake levels, and low lake levels as well, appears to be regulation of all the Great Lakes, with the discharge capacity of the outlet channels increased about 25 percent. This would permit the passage of more water through the lake system in the years of overabundant supply and guard against dangerously high levels.

At present only Lake Superior is regulated, and is the only lake having greatly increased outlet capacity. Discharge capacities of the St. Clair and Niagara Rivers, have been increased to some extent, but by no means to the 20 or 25 percent needed. As for Lake Ontario, the discharge capacity of the St. Lawrence River, its outlet, has been reduced at the Galops Rapids by the Gut Dam. This will, no doubt, be corrected and the cross section at that place considerably enlarged when the St. Lawrence power project is constructed.

The serious complaint 25 and 30 years ago was because of low lake levels. Today there are many complaints because of high lake levels.

GREAT LAKES CASE

It has been suggested that efforts be made to obtain a modification of the United States Supreme Court decree, which limits the diversion of water at Chicago to 1,500 cubic feet per second annual average, in addition to domestic pumpage. Even if an increase in this diversion would have a marked effect on lake level (which is not the case), the impracticability of relief through such Court action is obvious to anyone familiar with the Lake States litigation.

In the original hearing of this case, Special Master Hughes recommended November 1927 that the bill for injunction, filed by the Lake States, be dismissed. The Supreme Court did not follow this recommendation but, in the Taft opinion, January 14, 1929, decided that in the absence of any affirmative action by Congress the diversion, since it was for purposes of sanitation, had no legal basis and that the complainants were entitled to a decree. The case was then re-referred to the special master to determine what measures were necessary for the disposition of the sewerage of the sanitary district through other means than diversion of water from Lake Michigan; and to determine what diversion would be necessary for maintaining navigation in the Chicago River, as a part of the port of Chicago, after the sewage disposal works were in operation. The special master concluded that this latter figure should be 1,500 cubic feet per second, annual average, in addition to pumpage.

Testimony regarding rising lake levels was presented in the trial of the case on re-reference; and in his report on re-reference, December 1929, the special master found that the mean levels of Lakes Michigan and Huron had risen approximately 3 feet 9 inches from July 1926 to July 1929; and that during this

same period the levels of Lakes Erie and Ontario had exhibited a corresponding relative rise. He stated that:

"The change in level cannot be taken to modify the decision of this Court with respect to the legal rights of the complainants in relation to the diversion, or as to the nature of the ultimate relief to be awarded. The evidence, however, was received in order that the Court may have the facts before it in considering the provisions of its decree."

(End of document.)

Mr. DONDERO. How high is Lake Michigan now above normal?

Mr. RAMEY. Lake Michigan right now is at elevation about 581.6 feet above mean sea level at New York. That is about 3½ feet above normal.

Mr. DONDERO. That is all.

Mr. MACHROWICZ. Are there any questions by members of the committee?

(No response.)

Mr. DONDERO. Thank you very much, Mr. Ramey.

Is Mr. Lawrence J. Fenlon here, the assistant attorney for the Sanitary District of Chicago?

STATEMENT OF LAWRENCE J. FENLON, PRINCIPAL ASSISTANT ATTORNEY, SANITARY DISTRICT OF CHICAGO

Mr. FENLON. Mr. Chairman and members of the committee, my name is Lawrence J. Fenlon. I am principal assistant attorney for the Sanitary District of Chicago.

In the interest of saving time, we have prepared a formal statement of our position, copies of which have been duly presented to the clerk. In this statement we recommend that the testimony taken May 27 and 28 and June 4 and 5, 1952, printed in Document 82–18, be embodied in the record of the present hearings in the interests of time.

I would ask the privilege, again in the interests of time, that this statement be filed in the record.

Mr. DONDERO. Without objection, it will be received for the record.

(The statement of the Sanitary District of Chicago is as follows:)

STATEMENT OF THE SANITARY DISTRICT OF CHICAGO

Hearings were held May 27–28 and June 4–5, 1952, before the Committee on Public Works, House of Representatives, 82d Congress, 2d session, on H. R. 8165 (H. R. 6080, H. R. 6098, H. R. 6100, H. R. 6956, H. R. 8165, H. J. Res. 358, and H. J. Res. 372) a bill to authorize the State of Illinois and the Sanitary District of Chicago, under the direction of the Secretary of the Army, to help control the lake level of Lake Michigan by diverting water from Lake Michigan into the Illinois Waterway. Testimony presented at these hearings was published in Document 82–18.

As a result of these hearings, a bill for the diversion of 1,000 cubic feet per second of water from Lake Michigan, in addition to the presently authorized diversion (1,500 cubic feet per second annual average, in addition to domestic pumpage), for a period of 3 years, was approved by the Committee on Public Works, late in June 1952, and recommended to the House of Representatives, for passage. This bill provided for a study by the Army engineers to determine whether or not the additional diversion would be adequate to provide proper sanitary conditions for navigation in the Illinois Waterway. Since Congress adjourned in 1952 before action could be taken on the recommendation of the committee and since the bills now pending before the committee are similar and for the same purposes as were the bills considered at the hearings in 1952, it is recommended that the testimony taken May 27–28 and June 4–5, 1952, and printed in Document No. 82–18 be embodied in the record of the present hearings. This recommendation is made to save the time of the committee and to prevent repetition of the testimony to the members (19 in number) who have heard it before.

The data submitted in 1952 is supplemented by the statement following, which brings the record on expenditures for sewage treatment down to date (July 1,

1953), and also furnishes the record on sewage-treatment operations for the years 1951 and 1952.

Construction expenditures for sewage-treatment facilities have been increased, by July 1, 1953, to $301 million, composed of $154 million for sewers, $14 million for pumping stations, and $133 million for treatment plants. This represents an expenditure of $21 million in the last 18 months.

In 1951 the percentage of sewage treatment by the Sanitary District of Chicago (on sewage passing through the treatment plants), based on removal of biochemical oxygen demand (BOD), was 92.5 percent. In 1952 the corresponding figure was 93.6 percent. A degree of sewage treatment greater than this cannot be expected either in the present state of the art of sewage treatment or in the foreseeable future.

In 1952, some 1,113 million gallons per day of sewage, from a population equivalent (human population plus industrial wastes) of 7,080,000 population, was collected and treated. This was substantially 99 percent, by volume, of all the sewage within the sanitary district, and slightly more than 95 percent, by strength, of the sewage.

As heretofore emphasized at the original hearings before this committee in the 82d Congress, 2d session, the Illinois Waterway is an artery of commerce of great and steadily increasing importance to the Nation. It connects the two most important waterway systems in the United States, namely: the Great Lakes and the Mississippi River. The commercial importance of this waterway has been recognized by Congress, which has approved the project for widening the main drainage canal from Joliet to Sag and the Calumet-Sag Channel to extend this waterway to the important Calumet industrial region.

It would benefit the welfare of the users of this waterway, both on boats and on shore, to have at all times a clean stream on and about which to operate. Industry and industrial workers would be benefited by having clean water for plant uses.

Despite the fact that the Sanitary District of Chicago is now and for some time past has been providing complete treatment for substantially all of its sewage (to the extent of reducing its putrescence by more than 90 percent, as an annual average) the upper 50 to 60 miles of the Illinois Waterway is foul and, at times, extremely offensive. This is particularly the case in respect to the residents and workers along the Brandon Road pool in Joliet, Ill. No sanitary project in the entire world equals the sewage treatment in the Sanitary District of Chicago, or approaches it in volume.

The waterway is foul because, even with the highest degree of sewage treatment practicable, it receives each day a considerable tonnage of suspended sewage solids in approximately 1,100 million gallons per day (1,650 cubic feet per second) of treated sewage, having a biochemical oxygen demand in excess of that which can be satisfied by the water presently diverted. The water authorized for navigation and now available in the canals, and the aerated treated sewage, can provide only about 75 percent of the dissolved oxygen needed to supply the oxygen demand and to stabilize the solids remaining after complete sewage treatment. Since the flow is through quietly moving streams there is not much aeration of the water and little oxygen is absorbed from the air. The digesting of sludge previously settled in the canals and the pools of the waterway, at times, increases the oxygen demand.

No marked improvement can ever be expected with the present quantity of fresh water available.

An additional diversion of 2,000 cubic feet per second of water from Lake Michigan, in addition to the presently authorized 1,500 cubic feet per second from the Lake Michigan watershed, would, insofar as can be presently foreseen, provide a clean stream throughout the Illinois Waterway. This should provide at least 3 parts per million of dissolved oxygen in the most critical section of the waterway, with a probability of 4 parts per million in time. An additional diversion of 1,000 cubic feet per second would improve the condition considerably and we believe the study of the situation, as proposed, would lead to a recommendation for a permanent diversion in excess of this 1,000 cubic feet per second.

The need of water for the waterway between Lockport and Grafton was not considered by the Supreme Court in the Lake States case. This case, between States, was limited to the Great Lakes and to ports on the lakes. The Supreme Court decision of 1929 (278 U. S. 367) held that the authority of the Secretary of War was limited to authorization of a diversion for the purpose of maintaining navigation in the Chicago River.

The study of the amount of water needed to develop a commercially useful waterway in the Illinois River, required in the River and Harbor Act of July 3,

1950, and made 1933 (H. Doc. 184, 73d Cong., 2d sess.), should now be completed and the indirect needs, in the matter of securing satisfactory sanitary conditions for those aboard vessels or employed at terminals, should now be determined.

The Army engineers at the original hearings before this committee in the 82d Congress, 2d session, recommended an increase of 1,000 cubic feet per second and that studies contemplated by the pending bills be undertaken with a view of determining whether or not an increased permanent diversion was necessary for the Illinois Waterway; their report and recommendations to be thereafter submitted to the Congress for their consideration.

We, therefore, respectfully urge that an increase in diversion be permitted to be effective during the course of the studies recommended by the Army engineers, to the end that this committee may have the benfit of this advice in recommending the enactment of necessary legislation.

Respectfully submitted.

The Sanitary District of Chicago Board of Trustees: Anthony A. Olis, president; Frank W. Chesrow, John A. Cullerton, Casimir Griglik, John G. Henneberger, J. B. Martin, Wm. S. Nordburg, William F. Patterson, Michael J. Rudnik; Harry E. Eaton, clerk; William A. Dundas, general superintendent; William H. Trinkaus, chief engineer; H. P. Ramey, assistant chief engineer; Lawrence J. Fenlon, principal assistant attorney; Russell W. Root, attorney.

Mr. FENLON. There is just one other point, Mr. Chairman and members of the committee. Congressman Sheehan referred to the International Joint Commission and the treaty that was enacted previously relative to the diversion, and he indicated that a legal statement would be probably made by the sanitary district. I would ask the privilege of later presenting for the information of the committee the position of the sanitary district on that phase of the matter relative to the International Joint Commission and the treaty itself.

May I have that privilege?

Mr. DONDERO. Without objection, you may have that privilege.

(The statement of Mr. Fenlon on the subject of the International Joint Commission and the treaty with Canada is as follows:)

HEARINGS, COMMITTEE ON PUBLIC WORKS, 83D CONGRESS, JULY 15–16, 1953, ON H. R. 3300 AND H. R. 3192 TO H. R. 3197 AND H. R. 3208 TO H. R. 3214

The following statement is herewith submitted by the proponents of the above bills in support of the position that the Congress has jurisdiction over the diversion of water from Lake Michigan at Chicago, as distinguished from the contention that such jurisdiction is rested in the International Joint Commission, by virtue of the treaty of 1909 between the Unied States and Canada.

The Supreme Court of the United States in the so-called *Lake Level* cases (266 U. S. 405 at 428, 429; 278 U. S. 367 at 417; and 281 U. S. 179 at 199) has consistently recognized that the power to grant the diversion at Chicago, proposed in the pending bills, rests in the Congress.

Special Master Charles Evans Hughes (later Chief Justice), in his Report on Rereference filed with the Supreme Court December 17, 1929, in recommending the form of final decree to be enacted by the Supreme Court, likewise recognized (par. 9 of report) that the Congress had the power to prescribe a different diversion than the final authorized 1,500 cubic feet per second.

Chairman Stanley of the International Joint Commission recognized and stated at the committee hearing on May 28, 1952, and again on July 15, 1953, however, that the Commission would have jurisdiction only if the diversion "appreciably lower the levels of the boundary waters." The pending bill, H. R. 3300, introduced by Congressman Jonas, provides for an annual average increase at Chicago of 1,000 cubic feet per second for a period of 3 years to enable the Army engineers to conduct a study as to the effect of such increase on the Illinois Waterway. All authorities are in accord that the increased diversion of 1,000 cubic feet per second will not "appreciably" lower the lake levels.

At the hearings of May 27–28, 1952, on H. R. 8165 in the 82d Congress, and again at this hearing on H. R. 3300, July 15, 1953, Colonel Milne, on behalf of the Army engineers, testified in favor of these bills and stated the Army recommended favorable action by the Congress so that the necessary studies during a 3-year

period should be undertaken and their report submitted to the Congress by January 1956.

The Public Works Committee in the 82d Congress favorably reported the then pending bill, but action was not taken by the 82d Congress due to adjournment.

The contention that the International Joint Commission has jurisdiction of diversion at Chicago, rests on the provisions of article II of the 1909 treaty between the United States and Canada. The last clause of the first paragraph of article II as to diversion, and so forth, specifically provides "but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto."

The diversion at Chicago, then assumed to be 10,000 cubic feet per second, was already existing at the time of the approval of the 1909 treaty and therefore is exempt from the provisions of said treaty and from the jurisdiction of the International Joint Commission created thereby.

This is clear from the official reports and the recommendations therein leading up to the enactment of the 1909 treaty. The eventual provision, article V of the treaty, of a diversion at Niagara Falls of 20,000 cubic feet per second for the United States and 36,000 cubic feet per second for Canada was made with the implied understanding that 10,000 cubic feet per second was being diverted at Chicago, as a case "already existing."

The Second Interim Report of the Canadian Section of the International Waterways Commission, dated April 25, 1906, contained the following pertaining to the diversion at Chicago:

"At Chicago, the Americans have built a drainage canal which, when in full operation, will use about 10,000 cubic feet of water per second.

"The quantity of water required for the purposes of a ship canal is comparatively small, but the character of this drainage canal at Chicago is such as to involve a continuous flow of water which will have the effect of lowering Lake Michigan by over 6 inches and Lake Erie by 4½ inches. The nature of this work may be judged when we state that the expenditure will be over $40 million, and that power works are in course of construction on the canal which will generate some 30,000 horsepower.

"As the diversion from Lake Michigan to the Mississippi River is of a much more serious character than the temporary diversion from the Niagara River, it is felt that the amount of water to be taken on the American side of the Niagara River should be limited to 18,500 cubic feet per second.

"But, in the opinion of your Commission, the preservation of Niagara Falls is a minor matter as compared with the preservation of the interests of navigation on the Great Lakes. * * *

"It is exceedingly important in the interests of navigation, both to ourselves and the people of the United States, that the diversion by way of the Chicago drainage canal should be limited. It is equally essential in the interests of both countries that no diversion or interference should be allowed in streams crossing the boundary which would interfere with the interest of navigation in either country. It is all important that while we are settling the policy as to Niagara Falls we should at the same time establish certain principles which shall be applied in settlement of all classes of dispute which can arise between the two countries with regard to the use of boundary waters or of streams which cross the boundary from one country to the other.

"If our proposal is carried out the diversions will be about as follows:

	Per second cubic feet
Diversions on the American side:	
Niagara Falls	18,500
Chicago drainage canal	10,000
Total	28,500
Diversions on the Canadian side: Niagara Falls on the Niagara Peninsula	36,000

The second interim report concluded with the Commission's recommendation that a treaty be framed recognizing among other matters that—

"6. (*b*) It is possible to preserve its beauty and yet permit the development on the Canadian side of the Niagara River itself and elsewhere by diversions on the Niagara Peninsula to Lake Ontario of water for power purposes to the extent of not more than 36,000 cubic feet per second, exclusive of water required for domestic uses, and for the service of locks in navigation canals.

"(*c*) It is likewise possible to allow the diversion of waters for power purposes on the American side to the extent of 18,500 cubic feet per second, exclusive of

the amount required for domestic uses, and for locks in navigation canals, without serious injury to the scenic aspect of the falls.

"(*d*) Your Commission are of opinion, therefore, that for the present the diversions should be limited to the quantities mentioned in subsections (*b*) and (*c*).

"(*e*) This would give an apparent advantage to Canadian interests, but as the diversion is not of serious injury to the falls and does not materially affect the interests of navigation, it is more than counterbalanced by the complete diversion of 10,000 cubic feet by way of the Chicago drainage canal to the Mississippi River."

The report of the American members of the International Commission Regarding the Preservation of Niagara Falls, dated March 15, 1906, contained the following:

"24. The Chicago drainage canal, constructed the authority of the State of Illinois, was designed to divert about 10,000 cubic feet per second of water which would naturally flow over Niagara Falls. It has not been fully completed, but it now has a capacity of about 5,000 cubic feet per second. The amount which it is actually diverting has thus far been limited by the Secretary of War to about 4,200 cubic feet per second. In addition to the foregoing about 333 cubic feet per second of Lake Erie water is now taken for power purposes from the Erie Canal at Lockport.

* * * * * * *

"32. If the falls are to be preserved it must be by mutual agreement between the two countries. As a step in that direction we recommend that legislation be enacted which shall contain the following provisions, viz,

"'(*a*) The Secretary of War to be authorized to grant permits for the diversion of 20,500 cubic feet per second, and no more, from the waters naturally tributary to Niagara Falls, distributed as follows:

	Cubic feet
Niagara Falls Hydraulic Power & Manufacturing Co	9,500
Niagara Falls Power Co	8,600
Erie Canal or its tenants (in addition to lock service)	400
Chicago drainage canal	10,000

"'(*b*) All other diversion of water which is naturally tributary to Niagara Falls to be prohibited, except such as may be required for domestic use or for the service of locks in navigation canals.

"'(*c*) Suitable penalties for violation of the law to be prescribed.

"'(*d*) The foregoing prohibition to remain in force 2 years, and then to become the permanent law of the land, if, in the meantime, the Canadian Government shall have enacted legislation prohibiting the diversion of water which is naturally tributary to Niagara Falls, in excess of 36,000 cubic feet per second not including the amounts required for domestic use or for the service of locks in navigation canals. It is assumed, however, that an understanding upon the subject would be reached by treaty.

"33. The object of such legislation would be to put a stop to the further depletion of the falls, and at the same time inflict the least possible injury upon the important interests now dependent upon this waterpower. The amount to be diverted on the Canadian side has been fixed with a view to allowing to the companies on that side the amounts for which they now have works under construction, which are:

	Cubic feet
Canadian Niagara Power Co	9,500
Ontario Power Co	12,000
Electrical Development Co	11,200
Niagara Falls Park Ry. Co	1,500
Welland Canal or its tenants (in addition to lock service)	1,800

"34. One of the effects of such legislation would be to give to Canada the advantage of diverting 7,500 cubic feet per second more than is diverted in the United States. The advantage is more apparent than real, since the power generated on the Canadian side will to a large extent be transmitted to and used in the United States. In the negotiation of treaty, however, the point should be considered."

The Joint Report of the Commission on the Conditions Existing at Niagara Falls, With Recommendations, dated May 3, 1906, reported in part as follows:

"The Commission has made a thorough investigation of the conditions existing at Niagara Falls, and the two sections have presented reports to their respec-

tive governments setting forth these conditions, to which attention is invited. The following views and recommendations are based upon a careful study of the facts and conditions set forth in these reports:

"1. In the opinion of the Commission, it would be a sacrilege to destroy the scenic effect of Niagara Falls.

"2. While the Commission are not fully agreed as to the effect of diversions of water from Niagara Falls, all are of the opinion that more than 36,000 cubic feet per second on the Canadian side of the Niagara River or on the Niagara Peninsula, and 18,500 cubic feet per second on the American side of the Niagara River, including diversions for power purposes on the Erie Canal, cannot be diverted without injury to Niagara Falls as a whole.

"3. The Commission, therefore, recommend that such diversions, exclusive of water required for domestic use or the service of locks in navigation canals, be limited on the Canadian side to 36,000 cubic feet per second, and on the United States side to 18,500 cubic feet per second (and in addition thereto, a diversion for sanitary purposes not to exceed 10,000 cubic feet per second, be authorized for the Chicago drainage canal), and that a treaty or legislation be had limiting these diversions to the quantities mentioned."

The International Waterways Commission progress report on report upon the Chicago Drainage Canal, by the Commission, dated January 4, 1907, contained the following recommendation:

"43. A careful consideration of all the circumstances leads us to the conclusion that the diversion of 10,000 cubic feet per second through the Chicago River will, with proper treatment of the sewage from areas now sparsely occupied, provide for all the population which will ever be tributary to that river, and that the amount named will therefore, suffice for sanitary purposes of the city for all time. Incidentally it will provide for the largest navigable waterway from Lake Michigan to the Mississippi River, which has been considered by Congress.

"We therefore recommend that the Government of the United States prohibit the diversion of more than 10,000 cubic feet per second for the Chicago drainage canal."

From the foregoing references to the official reports and the recommendations contained therein by the Canadian section and, by the American members in separate reports to their respective Governments, and in the joint reports to both Governments, the amounts of diversion ultimately allocated to each of the Governments, under article V of the 1909 treaty, viz: 20,000 cubic feet per second to the United States and 36,000 cubic feet per second to Canada, contemplated recognition and continuation of the then existing diversion at Chicago of 10,000 cubic feet per second.

Otherwise there could have been no justification or excuse for the difference in diversion allotted to Canada of 36,000 cubic feet per second and to the United States of only 20,000 cubic feet per second. The Canadian and American members both clearly and jointly recognized that the difference was to be accounted for by the allowance of the 10,000 cubic feet per second diversion at Chicago.

As the diversion at Chicago, then assumed to be 10,000 cubic feet per second, was existing prior to and at the time of the adoption of the 1909 treaty, jurisdiction of the question of such diversion if not inexcess of 10,000 cubic feet per second, under the specific provisions of article II of the treaty, viz: "but this provision shall not apply to cases already existing * * *" does not rest with the International Joint Commission created by the 1909 treaty, but remains vested in the Congress.

A question similar to that here presented was recently considered by the United States Circuit Court of Appeals, District of Columbia Circuit, in the case of *Niagara Mohawk Power Corp.* v. *Federal Power Commission* (202 Federal Reporter, 2d series, 190 at 204 and 208). This case was decided December 31, 1952, and involved the question of usufructuary rights of the Niagara River existing prior to the treaty of May 13, 1910, between the United States and Great Britain, which related to diversions of water from the Niagara River for power purposes.

The court in its opinion held, in passing upon article V of the treaty:

"We observe that, in restricting the temporary withdrawal of waters from the Niagara, the only purpose of the High Contracting Parties was to prevent the level of Lake Erie and the flow of the river from being appreciably affected by diversion for power purposes. It was therefore not the intention of the two Governments to take away the water rights then existent under State law and then being actually utilized, but simply to keep those rights within the prescribed maximum of 20,000 cubic feet per second. And in order to be sure that

the treaty should not be construed as having destroyed existing rights, the Parties wrote into it their desire.

"'* * * to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States side of the river under grants of authority from the State of New York * * *'"

The court (p. 208) concluded its opinion on this phase by holding:

"(15) We hold that the Pettibone-Cataract and International Paper water rights are valid usufructuary property rights under the law of New York; that the treaty of 1910 did not destroy them but preserved their integrity; * * *"

So too, in the matter of the present proposed legislation, which provides for a study and a temporary increase of diversion of 1,000 cubic feet per second, as the total diversion will only be one-fourth of that in existence at the time the 1909 treaty was adopted, the Congress is clearly within its rights and has jurisdiction to enact the legislation.

Respectfully submitted,

THE SANITARY DISTRICT OF CHICAGO,
By LAWRENCE J. FENLON,
Principal Assistant Attorney.

Mr. FENLON. That is about all, unless you have some questions.

Mr. STANLEY. Could I ask him a question?

Mr. DONDERO. No one would deny the chairman of the International Joint Commission the right to ask a question. Certainly, Mr. Stanley.

Mr. STANLEY. I would like to ask for a point of information.

Is it your contention that the International Joint Commission had ever authorized any diversion at Chicago?

Mr. FENLON. No, sir. We did not. The purpose of asking this additional privilege of covering that situation is to give the history of the deliberations and the reports of the Canadian representatives and the American representatives at the time the treaty was agreed upon and the conditions as they were at that time.

Mr. DONDERO. My recollection is that Canada has not interposed any objection before this committee in all of its hearings in regard to this matter.

Mr. FENLON. This is the first time in 40 years that the matter has been before the Congress, off and on, that any suggestion to that effect has been made, to the best of my knowledge.

Mr. DONDERO. Is Mr. Albert J. Meserow here, attorney on behalf of the Great Lakes Property Association? Mr. Meserow has been before the committee on a previous occasion.

STATEMENT OF ALBERT J. MESEROW, COUNSEL, ASSOCIATION FOR THE PROTECTION OF GREAT LAKES PROPERTY, INC.

Mr. MESEROW. If the committee please, I appreciate the opportunity to be here. My name is Albert J. Meserow. I am an attorney and am here as counsel for the Association for the Protection of Great Lakes Property, Inc. It is an organization composed of lake-front property owners from the States of Michigan, Wisconsin, Indiana, and Illinois.

I appeared before this committee at a previous hearing in 1952. At that time I told in detail of the sufferings and plight of the lake-front property owners by reason of the high levels of the lake. I regret to say that the lake-front property owners have had no relief of any kind from any agency of any government since that time or prior thereto.

We are very much in favor of this bill, and we ask that the diversion be increased, not by 1,000 feet but by 10,000 feet per second—the maximum capacity of the Illinois Waterway. We are interested in

lowering the lake levels. Anything that will lower the levels—and this diversion will—will be beneficial to these property owners.

The question was raised by the gentleman from Ohio about the stand of these people in a newspaper. I want to say this: I have communications from property owners from all of these States for the past 2 years. And, although the officials of the States, the governors and attorneys general, and the commissions and board of all these States that control water are traditionally opposed to diversion, the people and their constituents are in favor of it; and they cannot understand why their officials are opposed to diversion.

I would like, if the committee please, to incorporate in my statement here the statement I made before this committee in 1952, which appears on pages 99, 100, and 101, and so on.

Mr. DONDERO. Without objection, it may be incorporated in the record.

(The statement of Mr. Meserow, made before the Public Works Committee of the House of Representatives in 1952, is as follows:)

STATEMENT OF ALBERT J. MESEROW, ATTORNEY, COUNSEL FOR THE ASSOCIATION FOR THE PROTECTION OF GREAT LAKES PROPERTY, INC.

My name is Albert J. Meserow. I am an attorney. I am not an assistant attorney general. I am a former assistant attorney general of Illinois and I handled the lake division litigation in the United States Supreme Court in 1941, but I appear here as the counsel for the Association for the Protection of Great Lakes Property, Inc. It is a not-for-profit corporation that was recently organized, and its members are lake-front property owners from the States of Wisconsin, Illinois, Michigan, and Indiana.

We are in the midst of getting more members every day from other Great Lakes States. We are in favor of this diversion bill, or all of these bills, not for the many worthy reasons you have heard yesterday and today, such as clean streams, fish life, navigation, and other reasons which are very worthy, but there is a primary reason as to why these bills should be passed immediately. That is to protect the property that has been damaged along the Great Lakes by the high levels and the storms that ensue.

I think that that should be the primary consideration of this committee in the passage of this bill. We are not so much concerned with the Illinois Waterway as we are with lowering the levels of Lake Michigan.

You have heard several statements made that taking out an additional 2,000 cubic feet per second would lower the levels about 1¾ inches. That is a hypothetical result that the engineers estimate. If it is true we feel, and the property owners feel, that an inch and a half or an inch and three-eighths lower is better than an inch and three-eighths higher.

We want to say that we are in favor of not only 3,500 cubic feet per second, but 10,000 cubic feet per second.

Congress can by immediately authorizing an increase of 10,000 cubic feet per second get those levels down about 6 inches, or maybe more. Six inches would means an awful lot of these property owners, who have been clamoring for some relief.

Gentlemen, these property owners have come to the local city attorneys and councils and aldermen. They have gone to their State legislators and the mayors and governors, and have gone to everybody in the Army engineers as well, and have gotten no relief. They must have some relief and they must have it fast. The engineers tell me that the lake levels are increasing and by the end of this year they will probably be a foot or more higher. The storms there take place in the spring and in the fall. If those levels increase another foot and we have these storms in October and November, there will be millions more in damages unless Congress acts immediately to give the maximum amount of diversion down the Illinois Waterway.

I would like to point out to you just a few instances of some of the things that are happening. A Congressman, whose name I have forgotten, asked the question, Why are the people of Cleveland in favor of these bills? It is a very simple answer. If the Congressmen could only see the damage being done by

these high levels, they could readily see why these Great Lakes States of New York, Pennsylvania, Ohio, Michigan, Wisconsin, and Minnesota, who have for 30 to 40 years been against diversion, have suddenly now turned in favor of diversion. It is because their constituents—the citizens of this country—and their homes are falling into the lake.

I will give you one instance in the city of Evanston. A man had a home there. He was an executive. He had a $60,000 home on the lake. He had a big, thick concrete seawall there. Last November in the storms the water came up so high that he had to employ 40 men to place sandbags around his house, and Congresswoman Church, who was the Congresswoman in his district, helped him move. He had to move his entire 8- to 10-room house out of there and live in a hotel because his whole home was surrounded like an island by water. Since that time he moved back and spent something like $10,000 to build jetties and take protective measures to protect his home.

Northwestern University, which has a long strip along Lake Michigan, lost over 200 feet of its shore. Loyola University likewise. It is not just confined to homes. There have been many homes where the foundations have been cracked. There was one apartment building in Chicago where they had a 50-foot beach at one time. That beach is entirely gone and the water is right up to the foundation. When the waves come, it has cracked the foundation to the point where the owners are afraid to permit their tenants to live in that building.

The streets of the city of Chicago have been washed away by the waves. As you all know, our Lake Front Drive is periodically closed every time there is a high wind that comes up because the entire lake front is flooded. That is all because of these high levels.

It is not only affecting the property owners, but we have enormous beaches in Chicago and Wisconsin and Michigan, and they, too, have been washed away. We have an Oak Street Beach in Chicago that would ordinarily accommodate 150,000 people on a hot summer's day. Now there is hardly any sand left, and I do not think it would accommodate 10,000 people. The same is true on the shores of Lake Michigan, where you have in Michigan all these summer homes and hotels. They have fallen into the lake.

One of our members had to move his summer home back 200 feet from the shoreline.

I had a good friend, a woman editor of one of our Chicago papers, who told me she has a home in Indiana. It is a permanent home. She has worked for about 40 years and saved up her money and bought this home. She says now the high water is washing away her entire beach, and the home will be ruined and all her havings lost.

I am pointing out a few of these instances, which can be multiplied by hundreds. In my opinion, the damage that has been done by the high levels on the Great Lakes is in excess of $100,000,000, and I think that is conservative.

People are spending and have to spend ten, twenty, thirty, forty thousand dollars and some have spent sixty thousand dollars to protect their property.

Gentlemen, these people need relief now. They do not need surveys. The Army engineers is a very competent organization. When they are approached, they continuously say, "We are going to make a study." That is not what the people need. We have had enough studies. We need immediate relief, and Congress can do it without one cent of cost to the taxpayer, and it can be done in 5 minutes by merely increasing the diversion.

I have just a few pictures I would like to leave with the committee for their records to show some of the damage that has been occasioned by this. This is only of two properties. The one with the sandbags is there also. I also have a news clipping from the Chicago Tribune of November 8 showing some of the effects of the waves which I would like to leave with the committee.

May I also say that I communicated with Gov. Henry F. Schricker, of the State of Indiana, about this pending Lake diversion bill that was introduced by Illinois Congressmen. I wanted to get his support. I am pleased to say that Governor Schricker, of Indiana, wrote me saying he would be in favor of the diversion bill and would give the support of the State of Indiana to the diversion bill. I have a copy of that letter, not with me, but I would like to send it in for the record, if I may be given that permission, Mr. Chairman.

Mr. MACHROWICZ. Without objection, the letter may be made a part of the record when it is received by the committee.

(The document referred to is as follows:)

Mr. MACHROWICZ. May I ask, in that connection, have you also contacted the Governor of the State of Michigan?

Mr. MESEROW. No; I have not.

Mr. MACHROWICZ. Have you any knowledge as to his views on this legislation or the views of the Michigan Legislature?

Mr. MESEROW. All I can say is that there are many, many good constituents along this Lake front. They are vitally concerned and vitally interested in increased diversion.

Mr. Olis mentioned to you about the Governor's Lake Conference Committee of Illinois. I would like briefly to comment on that committee's activities. I acted as secretary of that committee. It was a nonpartisan committee and Mr. Olis was chairman. We made a very, very thorough study for a period of 4 years of the general diversion question and its pros and cons. We heard representatives from all of the Great Lakes States and from all over. I want to say this: We prepared a report in which we recommended increased diversion to the extent of 3,500 cubic feet per second. I would like the opportunity to introduce in the record this final report of this committee.

Mr. MACHROWICZ. Without objection, it may be included in the record.

(The document referred to is as follows:)

FINAL REPORT OF THE GOVERNOR'S COMMITTEE TO STUDY LAKE MICHIGAN DIVERSION

This five-member committee was appointed on January 23, 1947, by Dwight H. Green, then Governor of Illinois, to study the advisability of increasing the diversion of water from Lake Michigan through the Illinois Waterway.

Anthony A. Olis, of Chicago, was appointed chairman of the committee; Attorney Albert J. Meserow, of Chicago, secretary; Ralph Morgan, of Peoria; Commissioner Oscar Hewitt, of Chicago; and Thomas B. Casey, of Springfield.

The committee was charged with the responsibility of assembling all the data pertaining to Lake Michigan diversion through the waterway, of conducting public hearings in those areas primarily interested in the problem, of consulting with all available technicians and experts, and of formulating a program in regard to diversion which would be in the best interest of the State of Illinois.

In the ensuing 4 years the committee has held 18 meetings and public hearings, studied and heard numerous technical opinions, heard representatives from the 6 Great Lakes States, and obtained the view of organizations and city officials in downstate Illinois as well as in Chicago.

The committee's findings and conclusions follow.

I. DIVERSION HISTORY

Water has been diverted from Lake Michigan into the Illinois River watershed since 1848, when water was pumped from the South Branch of the Chicago River into the Illinois and Michigan Canal to answer the navigation needs of the canal.

After 1857 the growing city of Chicago dumped its sewage into the Chicago River in order to avoid pollution of Lake Michigan, the source of its water supply. Starting in 1865, Chicago arranged with the I. and M. Canal commissioners to pump water from the river into the canal specifically for sanitary purposes. This pumpage stimulated the sluggish flow of the Chicago River, drew fresh water from the lake, and alleviated to some extent the noisome condition of the river.

From 1870 and a population of 299,000 to 1900 and a population of 1,699,000, Chicago pumped most of its sewage into the I. and M. Canal where it settled and did little to affect conditions on the lower Illinois River.

The drainage canal was opened in 1900 and the rate of diversion was increased to 4,000 cubic feet per second—more than four times the previous rate of diversion. By 1920 the canal was receiving the sewage of 3,000,000 people and industrial wastes equivalent to the sewage from another 1,000,000.

To handle this load the diversion rate was progressively increased until it reached 7,200 cubic feet per second in 1922. The net result was to flush untreated wastes down the river as far as Lake Peoria, creating an unwholesome condition in the river.

This policy—destined to continue without material modification until 1930—was forced on Chicago by its rapid growth, industrial as well as populationwise, and the unprecedented problems in connection with scientific treatment of the wastes.

Those communities along the lower stretches of the river—although contributing proportionately the same amount of pollution to the waterway—understandably were aroused at the complete despoilation of the stream.

Meanwhile, in 1909, the engineers of the Sanitary District of Chicago had started wrestling with the problems of artificial treatment of Chicago's sewage. The construction program of the proper facilities was slow in getting under way and the first sewage-treatment plants of any consequence were not placed in operation until 1922.

By 1930 the sanitary district had put in operation two more large treatment plants which removed more than one-fourth of all sewage pollution from domestic pumpage originating in the district.

In the meantime, six Great Lakes States—Wisconsin, Michigan, Minnesota, Ohio, Pennsylvania, and New York—with Canada as an interested observer, had petitioned the United States Supreme Court to restrain the sanitary district from unreasonable diversion of water from the Great Lakes-St. Lawrence watershed. Their action was based on the contention that such diversion lowered lake levels, damaged dock facilities, and retarded shipping on the Great Lakes.

On April 21, 1930, the Supreme Court entered a decree ordering the sanitary district to reduce its annual average diversion from Lake Michigan to 1,500 cubic feet per second on and after December 31, 1938. In addition, the sanitary district was bound by the decree to complete sewage-treatment facilities for all wastes originating in the district.

The depression and World War II hampered the construction program of the sanitary district, but at present the $200 million program is 95 percent completed, all sewage is being treated, and the practical limit of effectiveness has been reached.

It was of particular interest to the committee to note that the Supreme Court edict setting the arbitrary limit of 1,500 cubic second-feet is open to modification and that the Court, while reserving jurisdiction of the matter, emphasized further that Congress has jurisdiction over navigation and navigable streams.

II. OBJECTIONS

The principal objections to an increased diversion rate from Lake Michigan into the Illinois waterway appear to stem from the following sources:

1. Canada, which has attempted to create an international issue of diversion and has found the United States State Department since 1933 a willing tool, although the waters of Lake Michigan are entirely within the borders of the United States.

2. The cities of Peoria and Beardstown which went on record with the committee as fearing that increased diversion would create an additional flood hazard.

3. A few down-State citizens who, ignoring the Sanitary District of Chicago's $200 million treatment works, denounce the whole matter as a "Chicago scheme" to flush its sewage down the river.

4. Several sportsmen's groups which fear further pollution of the river.

5. Barge operators on the waterway who contend that any increase in the diversion rate will increase their costs.

6. The Great Lakes States, which brought the original action in the supreme court, although several groups from these States testified the high level of the Lakes in recent years has caused considerable property damage and they would welcome increased diversion at Chicago.

7. Several Eastern States which charged the additional diversion was being sought to increase the output of electricity and power.

All of the experts who testified before the committee indicated that the volume of water diverted through the Chicago River can have no appreciable affect on lake water levels which appear to rise and fall in cycles.

III. FOR INCREASED DIVERSION

In general, the proponents of increased lake diversion are those who live in proximity to the sanitary canal, those who are interested in improving the condition of the waterway, and such agencies as the United States Public Health Service, the city of Chicago Water Department, and other organizations.[1]

Chicago water engineers informed the committee that during storm periods the low rate of diversion permits the Calumet River with its industrial waste

[1] List of organizations on file with committee secretary.

load to back up into the lake not far from the source of the South Side's water supply. While a city of Chicago filter plant is in operation on the south side, the condition can become far from wholesome.

The sluggish nature of the Chicago River and the sanitary canal at the present diversion rate has lowered the oxygen content of the water to the vanishing point. This situation accounts for the most part, according to committee witnesses, for the foul odors which plague residents along the upper part of the waterway during hot spells, as far down as Joliet.

Also in favor of increased diversion are those sportsmen's groups which have made a thorough study of the problem and have learned that an increase in the rate with fresh water will improve the nature of the waterway to the point where it will sustain fish life.

IV. STATE BOARD CONSULTED

In view of the technical aspects of the many problems involved, this committee asked the Illinois State Water Resources and Flood Control Board to make a study and report the effect on the Illinois waterway of an increase of 2,000 cubic feet per second from Lake Michigan.

This board is composed of the heads of the following departments of the State of Illinois as well as their engineers and consulting specialists: Division of Public works and buildings, conservation, agriculture, registration and education, and health.

After a full investigation and study that board's report [3] contained the following conclusions and recommendations with respect to an increase of 2,000 cubic feet per second diversion from Lake Michigan into the Illinois waterway.

Conclusions.—1. That it would promote the general welfare of the State of Illinois, and particularly the inhabitants of the Illinois River Valley, if the waters of the river were at all times of a quality sufficient to sustain fish life and avoid the creation of a nuisance.

2. That the minimum desirable specification for such a water, by present-day standards, is that it should contain at least four parts per million of dissolved oxygen.

3. That, when the sanitary district of Chicago has achieved the points of treating all sewage and industrial wastes to an efficiency of 90 percent, it appears that 2,000 cubic feet per second additional diversion of Lake Michigan waters in addition to the present 1,500 cubic feet per second now authorized will be necessary if the quality of water specified in conclusion No. 2 is to be achieved.

4. That from data available an increase of 2,000 cubic feet per second would raise river stages for average flows from 0 to 1.2 feet and for low flows from 0 to 1.6 feet. The most pronounced increases occur in the tail water regions of the various dams, particularly those dams at La Grange and Peoria.

5. That these increased stages would cause increased pumpage costs in drainage and levee districts on the lower river to the estimated amount of $7,725 annually.

6. That currents in critical sections of the river will be increased by varying amounts, the estimated maximum increase for average conditions being 0.45 of a mile per hour for the canal immediately below Lockport.

7. That the effects of the suggested increased diversion will be primarily evident in the Lockport, Brandon Road, and Dresden Island pools.

8. That there is not at hand at the present time sufficient data to definitely evaluate the degree to which the proposed increase in diversion will improve the dissolved oxygen content of the lower river, i. e., below Peoria, though it may be concluded that the maximum beneficial effects in dissolved oxygen content will be apparent in the Brandon Road and Dresden Island pools and may be expected to improve conditions in the lower river.

9. That, assuming complete treatment of sewage, no flushing of putrescrible sludge into the lower river will result from the suggested increase in diversion.

10. That the effect of increased diversion on fish life may be expected to be generally beneficial, that is to say the limits of suitable environment for fine fish will probably be extended upstream. The degree to which this will be attained can only be determined through further study and actual experience.

11. That the proposed increase in diversion will have no effect on the general health of the valley.

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[3] Complete report with all supporting data on file with committee secretary.

12. That no detrimental effect can be expected from the increased diversion on municipal and industrial water supplies.

13. That, as a result of the studies necessary for the preparation of this report, there is indicated a need for the establishment under this board of a long-range over-all program for the investigation and study of the need for increased diversion and its effects.

Recommendations.—1. That any approval by the State of any move on the part of the Chicago Sanitary District looking toward an increase in diversion from Lake Michigan be predicated on the complete treatment of all sewage arising in the district to the maximum efficiency attainable within the method of treatment adopted.

2. That upon the completion of Chicago's projected sewage treatment plants the suggested increase of 2,000 cubic feet per second be accepted as acceptable subject to revision in the light of revised data.

3. That the State will assume no direct or contingent liability for any damages to persons or property as a result of the 2,000 cubic feet per second increase in diversion and, further, that these recommendations are not to be construed to relieve the sanitary district of Chicago of any liability for damages resulting from the increase of water from Lake Michigan.

4. That the technical agencies of the board are hereby authorized and directed to continue the investigation now started with the view of establishing a body of data adequate for development of final conclusions and recommendations in the future.

5. That, in the event of any increase in authorized diversion, that over-all control or budgeting of the total annual diversion available rest in the State water resources and flood control board.

V. FINDING OF THIS COMMITTEE

1. Increased diversion would not increase the flood hazard in the lower sections of the waterway to any appreciable extent.

2. In view of the complete treatment of the sanitary district's sewage facilities, pollution of the waterway has been cut to a minimum and increased diversion would restore it to a wholesome condition by raising the oxygen content of the water and diluting the excess nitrogen.

3. The increase in the current of the stream would be so slight it would not have any material effect on the costs of the barge operators.

4. Restoration of the waterway to a wholesome condition would provide relief for more than a million of our citizens along the upper reaches of the waterway who at present are plagued by the malodorous conditions caused by the sluggish flow.

5. The object of the proposed increase in lake diversion is not to provide increased hydroelectric facilities.

6. Canada has no proper interest in the amount of water diverted from Lake Michigan which lies entirely within the United States.

7. Increased diversion would have little or no effect on lake levels.

8. The matter of diversion from Lake Michigan is properly the responsibility of the Congress of the United States, notwithstanding that the United States Supreme Court has reserved jurisdiction of certain phases of the problem.

VI. COMMITTEE RECOMMENDATIONS

In view of the foregoing and the technical and expert opinion which supports these findings, this committee recommends that proper legislation be introduced into the Senate and House of Representatives of the Congress of the United States forthwith, and that this legislation establish the diversion rate from Lake Michigan into the Illinois Waterway at an annual average of 3,500 cubic feet per second, in addition to domestic pumpage, and that some provision be made for reviewing the diversion rate periodically in order that it may be adjusted to the best interest of the people of the State of Illinois.

(End of document.)

Mr. MESEROW. One more point, if you gentlemen please. In previous hearings the question of congressional jurisdiction over lake diversion has been raised by the opponents. In that connection, before the Supreme Court they say that only Congress and not the Supreme Court has the jurisdiction. When they come before Congress they say only the Supreme Court has jurisdiction of this

question and not the Congress. I would like to read about three lines from the 1930 decree entered by the United States Supreme Court.

Mr. MACHROWICZ. I would suggest, if possible, you make that as brief as you can because both Mr. Dondero and myself are vitally interested in the bill which will be brought up before the House in the next few minutes.

Mr. KLUCZYNSKI. Mr. Chairman, I have another witness who will just take a few moments.

Mr. MESEROW. It reads as follows:

"These requirements as between the parties are the constitutional right of those States subject to whatever modification they hereafter may be subjected to by Congress acting with its authority."

There are a couple of other places here where it is held all action of the parties and the Court in this case may be subject to any order Congress may make in pursuance of its constitutional powers. So the Court recognizes Congress does have power on this question.

Mr. MACHROWICZ. I did not mean to cut you short. We are perfectly willing to have you come back in the afternoon. I just wanted to call your attention to that fact.

Mr. MESEROW. Thank you very much.

Mr. MACHROWICZ. The photographs will be received in the files.

Mr. DONDERO. Mr. Meserow, have you an estimate, or any compilation of the damage done by the high water of the lakes in the last 2 years?

Mr. MESEROW. The Army engineers made a study of the approximate damage on Lake Michigan, and their figure was $65 million. I think it is conservative because they did not go into most of the sources that I had, and I think my estimate is $100 million on Lake Michigan alone.

I want to bring out these two new factors to this committee that were never heard before. Since this committee met last year I had occasion to attend a hearing of the International Joint Commission in Sault Ste. Marie, Mich., at which your honorable chairman was present. The reason why this Commission held a hearing in Sault Ste. Marie was the fact that the gates at Sault Ste. Marie, on the St. Marys River—there are 18 gates which divide Lake Superior and the St. Marys River and stop the flow into Lakes Michigan and Huron—these gates, immediately after the steel strike was ended, were opened, and it caused a flow of 117,000 cubic feet per second to flow from Lake Superior through the Soo locks into Lakes Michigan and Huron.

The property all around there was flooded, and your chairman will so testify because he saw it. The property owners lost their property, and docks and shipyards, gravel and coal companies along the shores were all flooded out.

So the Commission kindly held a hearing to hear these property owners.

I appeared on behalf of the property owners on the lower lakes—Lakes Michigan and Huron—and I told the Commission of the plight of the property owners, but I am sorry to say the International Joint Commission did absolutely nothing about it.

The question was raised here and asked of one of the witnesses about the reason for the high levels of the lakes. There are certain reasons, such as excess of rainfall and lack of evaporation, and those matters over which man has no control; but there is one matter over which man has control, and that is the flow from Lake Superior into Lakes Michigan and Huron.

I have here the figures from the Army engineers. In August of 1952 the flow from Lake Superior through the St. Marys River and the Soo locks into Michigan and Huron was 117,270 feet per second. Think of it, gentlemen; 117,000 feet of water flowing from Superior into Michigan, and here is the State of Illinois which for 40 years has been asking for a measly 1,000 feet of water and is having this difficulty in getting it.

You wonder why the levels are high. Lake Michigan can be compared to a bathtub. You have flowing into it 117,000 cubic feet per second, and flowing out 1,500 cubic feet per second. What happens? The level rises and it is going to overflow; and that is exactly what is happening. Certainly the State of Illinois is entitled to one-eightieth of the amount that is coming out of Lake Superior.

I want also to point out to this committee why Lake Superior's level is high. Why is it necessary for the International Joint Commission, composed of members from Canada and the United States, to cause this flow from Lake Superior into Lake Michigan? I have here a letter from Col. Arthur C. Gormley, colonel of the Corps of Engineers in charge of the Sault Ste. Marie locks.

In Canada there are two rivers that normally flow north into the Hudson Bay, but their flows were reversed into Lake Superior for power purposes, and for power purposes only.

One river is the Ogokie River. In the month of May the Ogokie put into Lake Superior 3,480 cubic feet per second, and the Longlake River put in, in the month of May, 1,795 cubic feet per second, or a total of 5,275 cubic feet per second. Now, think of it—5,275 cubic feet per second flowing from Canadian rivers into Lake Superior and causing Lake Superior's waters to rise.

Lake Superior water has to go out, and where does it go? Into Lakes Michigan and Huron. And who suffers? All of these thousands of lakefront property owners; people who cannot have their beaches and bathing any more because they are washed out and whose houses are falling into the lake. Northwestern University lost 200 feet of its lakefront. We had a storm a week ago in Chicago—a severe windstorm and thunderstorm—and the damage was terrific because of the water levels in the ensuing storms.

I say this committee and the International Joint Commission should give consideration to these property owners. The citizens of the United States should come first and not the Canadian power interests.

The second thought I want to inject to this committee is this: There have been questions asked as to what happens in times of low levels. There is just as much harm from the excessive low levels as there is from the high levels. I know that the sanitary district and every group and every interest and every State—Illinois at least—would be in favor of some sort of pact between the States—between the six Great Lakes States of New York, Pennsylvania, Ohio, Michigan, Wisconsin, Indiana, Minnesota—and Canada to form some Commission in which these States control the levels of the lakes, both in high- and low-water times.

It can be done with a minimum amount of cost. And I think, Mr. Chairman and gentlemen of the committee, that the opposing States, who have opposed diversion for the past 40 years, will now be agreeable to such a pact.

That is all I have to say. Thank you.

Mr. DONDERO. Are there any questions from the left?

(No response.)

Mr. DONDERO. Any questions from the right?

(No response.)

Mr. DONDERO. Thank you very much for your statement.

Mr. SHEEHAN. With your permission I would like to have included in the record the fact that there are three other elected officials from the sanitary district present here and who will not be heard unless you want them: Mr. J. B. Martin, Mr. John Henneberger, and Mr. William Nordburg.

For the information of the committee, there are 9 elected officials of the Sanitary District of Chicago, 3 Democrats and 6 Republicans, and all 9 are in favor of the bill.

Mr. DONDERO. Their presence will be noted in the record to show that they are here and their personal interest in this hearing before the committee.

If there are no other witnesses to be heard this morning, the committee will stand adjourned.

Mr. STANLEY. In fairness to the International Joint Commission, Mr. Chairman, I would like to state that that matter of allowing 100,000 cubic feet per second to pass through the control gates was in order to hold the level of Lake Superior to the point that had already been determined by the control board. In order to do that they let this water through.

The people below complained. The water level did raise somewhat. This Commission, upon receiving that complaint and application, did not wait to go on a train. We flew up there and had a complete hearing, and found that that diversion had not affected the level of Lake Michigan materially.

We changed the flow of the water through these control gates to the entire satisfaction of the people concerned who were there and expressed their appreciation of the work the Commission had done for their immediate relief.

Mr. WATTS. Mr. Chairman, before we adjourn I want personally to welcome Commissioner Stanley here. He comes from my home State and has had a long and distinguished career in public service. He served as Governor of Kentucky and United States Senator, and is now Chairman of the International Joint Commission. It is a real pleasure to have you here this morning, Mr. Stanley.

Mr. DONDERO. I think we all say to you, Mr. Stanley, few men can claim a record of public service that can compare with yours.

Mr. STANLEY. Thank you.

Mr. DONDERO. The committee will stand adjourned.

(Whereupon, at 11:40 a. m., the committee adjourned until 10 a. m., the following day, Thursday, July 16, 1953.)

LAKE MICHIGAN WATER DIVERSION

THURSDAY, JULY 16, 1953

HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC WORKS,
Washington, D. C.

The committee met, pursuant to adjournment, at 10:05 a. m., in room 1302, New House Office Building, Hon. George A. Dondero (chairman) presiding.

Mr. DONDERO. The committee will come to order.

The committee has designated this day for hearing the opponents to the water diversion proposal at Chicago. Congressman Noah Mason of Illinois has another committee meeting and must leave quickly. The Chair has agreed to hear him very briefly at this time.

Congressman Mason, we are very glad to have you here.

STATEMENT OF HON. NOAH M. MASON, MEMBER OF CONGRESS FROM THE 15TH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. MASON. Thank you, Mr. Chairman.

This is my fourth appearance before this committee on the same problem—lake diversion. The first was in 1938, when it was a question of lake diversion for navigation purposes. At that time the Army engineers insisted that the 1,500 cubic feet per second was plenty for navigation purposes. Therefore the argument failed at that time.

Then in 1943 the argument was it was a health menace to the congested area in Cook County and they wanted to relieve the health menace there in Cook County by additional diversion and flush the health menace down the Illinois Valley—which we rather objected to.

Then in 1952, last year, it was on account of an unusually high lake level. And that is the situation today.

The question before this committee is whether you can regulate the lake levels by diversion of the lake water through the Illinois Waterway and down the Illinois River.

Mr. DONDERO. Congressman Mason, Cook County of course includes the city of Chicago.

Mr. MASON. Oh, yes. Of course, it is mainly the city of Chicago, but all of the congested area there is in Cook County.

Mr. Chairman, I wish to register my opposition to the proposal to increase the flow of water from Lake Michigan through the Chicago sanitary drainage canal and down into the Illinois River. I present my opposition from the standpoint of a man who has lived for 60 years within a mile of the greatest open sewer in the world, the unsanitary Chicago drainage canal and its pollution outlet, the Illinois River. I have lived in the tricities, La Salle-Peru-Oglesby, for over 60 years.

As a boy I enjoyed swimming in the clear waters of the Illinois River and spent many profitable hours fishing along its banks. In those days the Illinois River ranked second in the United States, next to the Columbia River, in the amount and value of its commercial fishing. That was all changed when the Illinois Legislature permitted the so-called Sanitary District of Chicago to dump its sewage into the drainage canal and wash it down the beautiful Illinois Valley with Lake Michigan water. All fishing in the river from Joliet to Peoria was ended from then on; all swimming and pleasure boating on the river between these points were also stopped, because people do not want intimate contact with raw sewage.

Gentlemen, I could say a great deal about the past history of the Chicago Sanitary District; about its unsavory past; about its squandering of millions and millions of dollars of the taxpayers' money; about its slimy fingers reaching into the Illinois Legislature and contaminating certain members therein; about cinder bridle paths built out of the funds of the sanitary district at fabulous costs, using money that should have been used to build sewage disposal plants; but all of that is past history and does not bear directly upon the proposal before us today.

Mr. Chairman, today the arguments seem to be that the Great Lakes level is so high, so unusually high, that it is doing considerable damage along the shoreline to the docks and wharves and creating havoc there which should be relieved by an increased diversion downstate through the sanitary district canal.

Of course, an increased diversion above the 1,500 cubic feet per second permitted at present would simply mean greater danger downstate of additional floods. We are bothered enough as it is along the Illinois River Valley.

Now, gentlemen, having lived for more than 60 years in the same spot, I know a little bit about this problem. I knew it in its early stages. I remember when former Congressman Hull of Illinois sought the first diversion downstream after the Supreme Court decision settled it, and I debated against Congressman Hull at that time. I was in the Illinois State Senate at that time.

The Great Lakes as a whole are a great natural reservoir, draining and holding water from an area of over 300,000 square miles. This reservoir has its natural streams flowing in and others going out. Man has interfered with the natural arrangements by building dams and other provisions. This is one certain way to interfere with it. The Lakes have experienced what might be called a cycle of high water and low water. When the low-water stage was in evidence, the navigators on the Great Lakes objected to any further diversion because it was lowering the water around the docks and wharves that had been built, it interfered with shipping, and reduced the loading capacity of the vessels. Today the lake level is high and is interfering with the wharves and docks because of its height.

Mr. Chairman, I feel that the problem before your committee in connection with these hearings on these bills is the question as to whether diversion should be used as a means of regulating the lake levels, and, if so, how best that can be done. Certainly any amount of increased diversion, if it is a standard amount, will not solve the problem, because when the lakes are low it will be too much, and when the lakes are high it will not be enough. A standard diversion simply

will not answer the question, as I see it, nor will it solve the problem of the cyclical rise and fall of lake levels. That is the problem before you, Mr. Chairman.

Mr. DONDERO. Are there any questions from the left?

Mr. BECKER. I would like to ask Mr. Mason one question, Mr. Chairman.

Mr. DONDERO. Mr. Becker.

Mr. BECKER. We have 1 proposition here, Mr. Mason, but it poses 2 problems. One is those who are for and the others against.

Taking the problem of lake diversion, for example, and sticking to Lake Michigan and the other lakes that are involved, would you have any suggestion that you could make in reference to helping out the situation on the lakes where the docks and piers are 2, 3, and 4 feet under water at the present time, and where the situation could be helped by laked diversion, irrespective of anything having to do with the Chicago Sanitary District?

Mr. MASON. No. I would not have any suggestions, sir, but the Illinois Legislature appointed a commission to study this, with commissions from other States that are involved. Of course, if it involves Canada, it is an international situation. They appointed it to try to arrive at some solution. What that solution is it is very difficult to say at this time, because while these wharves are 1 or 2 feet under water now, I can remember the time when they were 2 or 3 feet too high, when the water was low.

So if you say that diversion of the lake water—any amount—will solve your problem when it is too high, then it would be too much when it is too low.

Mr. BECKER. That would be on a permanent basis. I am merely discussing now the point of view of diversion at a time when it is entirely too high, as it seems to be at present.

Mr. MASON. I have no answer to that, sir, because if you divert enough water from Lake Michigan to solve the problem of its present height on these wharves, you are then going to flood the whole downstate area and do as much damage or more damage than the situation is doing now around Lake Michigan.

Mr. BECKER. Thank you very much, Mr. Mason.

Mr. STAUFFER. Mr. Mason, I have just one question.

I notice in the bill that it is to provide for a navigable Illinois waterway. Is there any navigation on the Illinois River?

Mr. MASON. There is a great deal of navigation, and there is enough water for that navigation now. The Army engineers claim that the 1,500 cubic feet per second that is now being flushed through the sanitary district and into the Illinois River is sufficient for navigation purposes. That was settled definitely and irrevocably in 1938.

Mr. DONDERO. Are there any other questions?

Mr. ANGELL. Mr. Chairman.

Mr. DONDERO. Mr. Angell.

Mr. ANGELL. Congressman Mason, the engineers tell us this project would cost around $200,000. I lunderstand it is rather exploratory to determine just what effect a project of this sort would have on the problem of sanitation for the sanitary district. Why does the Federal Government have to pay that $200,000? It seems to me that is for the sanitary district. Is it their problem?

Mr. MASON. Do not ask me why the Federal Government should have to try to solve the problem of the people in Chicago and the surrounding territory. There have been millions and millions of dollars spent by the sanitary district for anything but building sanitary equipment.

Mr. SCUDDER. Mr. Mason, would the proposed increased flow in the Illinois River be sufficient to lower the lake?

Mr. MASON. Not the increased flow that is provided in these bills; and they would not dare put enough of an increased flow in there, because then they would flood the whole valley.

Mr. SCUDDER. Is there not a way in which the water can be diverted from Lake Michigan into another lake in order to accomplish this diversion?

Mr. MASON. I do not know of that, but that is something that has got to be explored. And before your committee can act, it should be explored.

Mr. DONDERO. Are there any further questions from the right?

Mr. MACHROWICZ. Yes.

Mr. DONDERO. Mr. Machrowicz.

Mr. MACHROWICZ. Mr. Mason, when was the last flood in Beardstown and that region?

Mr. MASON. Practically every spring we have floods. They built dikes down there to protect it, and some of the dikes have gone out and were flooded.

Mr. MACHROWICZ. You have not had a serious flood there for several years?

Mr. MASON. Not for several years.

Mr. MACHROWICZ. When was the last serious flood?

Mr. MASON. I can't tell you that.

Mr. MACHROWICZ. At any rate, it was at a time when Lake Michigan was at a low level, was it not?

Mr. MASON. Yes.

Mr. MACHROWICZ. So would that not indicate that the flood was not caused by Lake Michigan high waters?

Mr. MASON. That is true. The flood was not caused at any time by the flow of the water from Lake Michigan. But when the flow was more than 1,500 feet, before that ruling of the Supreme Court, it added to the flood danger in the springtime, when we have natural floods, of course.

Mr. MACHROWICZ. Let me ask you another question, Mr. Mason. Of course, you very rightfully object to the stench caused by the sewage coming down from Chicago.

Mr. MASON. Yes.

Mr. MACHROWICZ. And the other cities also. Is that right?

Mr. MASON. Oh, yes.

Mr. MACHROWICZ. The other cities have no sewage disposal plants, do they?

Mr. MASON. Some of them do, and they are beginning to require it now in these other cities.

Mr. MACHROWICZ. I understood you to say that they have done nothing in Chicago regarding a sewage disposal plant?

Mr. MASON. Oh, no, no. In Chicago they have at least solved we will say 80 percent by building disposal plants over the past 25 years. This

is not a new problem. This is a problem I have known for over 30 years.

Mr. MACHROWICZ. We have been given to understand in the testimony yesterday that the Sanitary District of Chicago and Cook County had some of the most modern sewage disposal plants in the country.

Mr. MASON. They have, and they have solved, I am just estimating and am guessing, at least 80 to 85 percent of their sewage disposal problem in a sanitary, proper way.

Mr. MACHROWICZ. That is about the extent they can solve it through the construction of sewage disposal plants. Isn't that right?

Mr. MASON. I imagine so.

Mr. MACHROWICZ. So they have done everything that was possible——

Mr. MASON. No. They have not done everything possible, but they have done a great deal.

Mr. MACHROWICZ. What other solution would you have for their problem?

Mr. MASON. I haven't any solution. That is not my problem.

Mr. MACHROWICZ. As far as the stench is concerned, would you say that the slow flow of the water had some contributory effect to the stench?

Mr. MASON. No. The trouble is this, sir. The stench is from Joliet on up to Chicago—along in there. If they have increased flows that brings it farther down the river then.

Mr. MACHROWICZ. Does not the increased flow of the water caused by the diversion bring more oxygen into the water?

Mr. MASON. Yes, it does, but not enough oxygen into the water to do the work.

Mr. MACHROWICZ. But enough at least to depreciate the stench?

Mr. MASON. It would alleviate part of the stench.

Mr. MACHROWICZ. So that this proposed bill would alleviate to some extent the stench which you are complaining of?

Mr. MASON. I am not complaining about the stench. We don't get that stench down there any more. The stench is from Joliet on up to Chicago. I am complaining about an additional flow pushing that stench on down the river.

Mr. DONDERO. Are there any other questions of Congressman Mason?

(No response.)

Mr. DONDERO. Thank you very much, Congressman Mason, for your statement.

Mr. MASON. Thank you very much, sir, for giving me this opportunity.

Mr. DONDERO. We have 7 witnesses today and on the list outside of the 7 are 5 or 6 Members of Congress. I will read their names and I would suggest if they desire to do so that instead of taking the time of the committee now, so that we can hear out-of-town witnesses, that they file their statements in the record.

Congressman Velde.

(The statement of Congressman Velde is as follows:)

STATEMENT OF HON. HAROLD H. VELDE, MEMBER OF CONGRESS FROM THE 18TH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. Chairman and members of the committee, I am grateful of course for the opportunity to appear before the committee and express my opposition to the various bills that have been introduced to divert water from the Great Lakes into the Illinois River.

I was born and reared in the Illinois River Valley. The Illinois River extends through the district which I am privileged to represent, namely, the 18th Congressional District, the Peoria and Pekin area of Illinois for 86 miles.

The problem of handling Chicago's sewage has been before us in downstate Illinois for practically the last 100 years. My distinguished predecessor, Senator Everett M. Dirksen, has opposed any increased diversion of Lake Michigan, or of the Great Lakes waters into the sanitary-district canal or into the Illinois River. As a mater of fact, the Senator obtained his nomination in 1932 by opposing the project of Congressman Ed Hall and perhaps some of you distinguished members recognize it was called the deep-waterway project of the Illinois River or the Mississippi River.

So I think I can speak with some authority on the question of diverting water and sewage from the city of Chicago into the Illinois River and its various tributaries. Of course, I realize that the background of this whole thing has been very ably presented by various witnesses who have appeared here before me. The injunction which was issued against the city of Chicago has been upheld by the Supreme Court of the United States.

I view these bills for diversion now as an attempt on the part of the city of Chicago not to lower the lake levels; not to increase the facilities for transportation on the Illinois River, but to get rid of more of their filth and slime into the Illinois River, which we have had to contend with as I said for practically the 100 years last past.

I oppose all of these bills, whether it be for 3,500 cubic feet per second or 1 cubic foot per second because I have seen in the district I represent the disastrous effects it has had.

The objections come from two sources mainly, the users of the surface water and the users of the underground water. In my district in the Peoria area we have the largest distillery in the world. It is the Hiram Walker Distillery. I am sure that you gentlemen have sampled some of their fine products at times. They depend upon the underground supply of water which we are fortunate to have in the city of Peoria. It comes out at the proper temperature for brewing good whisky.

Recently, in the past 50 years the underground water supply has been decreasing. In other words, the distilleries have had to go deeper and deeper. The reason for that is that the muck and filth that has been sent down to us from the city of Chicago has settled on the bottom of the river and prevented the seepage of water into the lower channels from which it is obtained by these distilleries. I am not an authority on the subject. I am no sanitary engineer. But, I have talked with a number of officials of various industries that are in my district and they tell me that unless we continue the present diversion rate in the Illinois River, they will have to continue to go deeper and deeper and eventually will be unable to obtain the necessary pure water at the right temperature to continue the manufacture of the products they do manufacture.

The situation as it is now is perfectly satisfactory with the manufacturers in my district. It has been over the past 50 years, as I said, that the water level has been going down, but recently it has been decreasing in depth I should say. So we are perfectly satisfied with the underground water levels if it is maintained as it is at the present time. What we are objecting to is any increased diversion which, of course, would naturally send the Chicago sewage on down a little bit farther than La Salle, Ill., as our distinguished colleague Mr. Mason said before this committee sometime ago.

The next objection I have had from the citizens of my district comes from the users of surface water. Included in the users of surface water are the fishermen, both commercial and sportsmen. It used to be that the Illinois River and its lakes and tributaries provided the best fishing grounds, second only to the Columbia River. In recent years, since the injunction was issued, that condition has been improving.

As I said about the underground water supply in my district I say about the surface supply. We are satisfied the way it is now. Of course, we would

rather see all diversion stopped from the city of Chicago and the Lake areas, but we are satisfied with the way it is now and we want to keep it that way. I can remember when fishing used to be good in the Illinois River and in the various tributaries and lakes surrounding it.

As I said, the opportunities for fishing both commercially and from a sportsman's angle have been increasing in recent years. I believe and hope that the committee agrees with me that any increased diversion will ruin the opportunities that we have and that the citizens of my district have and other downstream districts have to enjoy the sport of fishing and enjoy the fruits of the labors that the commercial fishermen have in downstate Illinois.

The third point I should like to make is that the trend of floods on the Illinois River has been on the increase over a period of the last 90 years. This can be substantiated by charts of "high and low water profiles" prepared by the Keystone Steel & Wire Co., of Bartonville, Ill. Due to land clearing, soil erosion, and silting of the river, the trend has been for higher and higher river stages. Any increase in flow from increased diversion will add to the flood trend. The present allowable diversion of 1,500 second-feet is an average and does not include discharge from the sanitary district nor runoff from rain. During heavy rains and flood time this diversion factor is very important. Several companies whose plants are along the Illinois River in my congressional district will be forced to spend large amounts to increase and strengthen their levees should there be any increased diversion over the present rate.

In conclusion, I would like to say that the matter of handling sewage, in my opinion, is a local matter. The problem of sewage disposal in the city of Chicago should be handled by the citizens who create that sewage and who cause that sewage.

Therefore, I believe, as I said before, viewing this thing and these bills as being bills not to decrease the lake level or to increase transportation facilities but to increase the diversion of sewage from the city of Chicago, I believe that they should be defeated because it is a problem that should be handled by the city of Chicago as a local issue.

Thank you.

Mr. DONDERO. Congressmen Zablocki, Simpson, Ostertag, and Ford.

(The statements of Congressmen Zablocki, Ostertag, and Ford, also a telegram from Mr. Burnquist, are as follows:)

ST. PAUL, MINN., *July 16, 1953.*

COMMITTEE ON PUBLIC WORKS,
House of Representatives:

State of Minnesota joins in opposition to consideration of bills authorizing increase of diversion of waters from Lake Michigan until completion of study of Great Lakes problem by United States Army engineers.

J. A. A. BURNQUIST,
Attorney General of Minnesota.

SEPTEMBER 21, 1953.

HON. GEORGE A. DONDERO,
Chairman, House Committee on Public Works,
House of Representatives, Washington 25, D. C.

DEAR MR. CHAIRMAN: At the time the hearings were held on legislation to authorize increased diversion through the Chicago drainage canal, I indicated my intense interest in the enactment of the bill.

As you undoubtedly know, I appeared before the Committee on Public Works in 1952, when hearings on similar legislation were held. My attitude on this long-needed legislation has not changed. I therefore wish to go on record in favor of committee action that will bring to the floor of the House a bill that will materially increase the diversion from Lake Michigan down the Chicago drainage canal.

I thank you and the committee members for giving me the opportunity to express my endorsement of this proposed legislation, and to supplement the testimony heretofore given on similar bills in the 82d Congress.

Sincerely,

GERALD R. FORD, JR.,
Member of Congress.

STATEMENT BY REPRESENTATIVE HAROLD C. OSTERTAG BEFORE THE HOUSE PUBLIC WORKS COMMITTEE WITH RESPECT TO PROPOSED INCREASED DIVERSIONS FROM LAKE MICHIGAN THROUGH THE CHICAGO DRAINAGE CANAL

Mr. Chairman, I am in full sympathy with those who are seeking lower water levels on the Great Lakes. For several years now the water has been at disastrously high levels and millions of dollars' worth of damage has been done to shorefront properties throughout the Great Lakes Basin.

At the same time I am of the opinion that the problem is to some extent caused by efforts to tamper with the water levels at different points in the Great Lakes Basin without regard to the overall effects on the system.

I am, therefore, convinced that it is essetnial that, since the Great Lakes are international waters, and since we have an international instrumentality—the International Joint Commission—with potential authority and jurisdiction over those waters, we should take the necessary steps to place the regulation of the Great Lakes water levels under that body.

I have introduced legislation looking toward that end which I should like to have inserted in the record of these hearings.

In addition, I have here a letter from the Department of State which traces the official history of the diversion into Lake Superior of two Canadian waterways, Long Lac and the Ogoki River, which formerly flowed into Hudson Bay.

In my judgment, these diversions into the basin, like the Chicago diversion out of the basin, should be under the jurisdiction of the International Joint Commission so that responsibility and control will be centered in one agency.

With your permission, Mr. Chairman, I should like to have this letter also entered in the record of these hearings.

[H. Con. Res. 82, 83d Cong., 1st sess.]

CONCURRENT RESOLUTION

Whereas the International Joint Commission was created by the "Treaty Between the United States and Great Britain Relating to Boundary Waters," signed January 11, 1909, and proclaimed May 13, 1910, and given authority to make provision for the adjustment and settlement of all questions affecting the boundary waters between the United States and Canada, and all questions involving the rights, obligations, or interests, of either in relation to the other, or to the inhabitants of the other, along their common frontier; and

Whereas, clothed with this authority, the International Joint Commission has dealt with a wide variety of problems affecting the boundary waters between the United States and Canada, with the predominant aim of maintaining the boundary waters at equitable levels to serve the interests of all those affected; and

Whereas, in the maintenance of such water levels in the interests of the economy and welfare of the common frontier, the International Joint Commission has from time to time established or authorized international boards of control which function at various points along the boundary waters, but these boards of control lack the necessary overall coordination of their activities; and

Whereas a prolonged cycle of abnormally high levels of the boundary waters over which the International Joint Commission has jurisdiction has created critical conditions throughout the entire area, causing extensive and severe damage both to the United States and Canada, and to the property of their citizens; and

Whereas no comprehensive plan exists to deal with this problem, either in the international boundary waters of the Great Lakes or in Lake Michigan, which though an integral part of the Great Lakes system is wholly contained within the United States: Now therefore be it

Resolved by the House of Representatives (the Senate concurring), That the House of Representatives hereby requests and urges the President of the United States to refer the problem of the abnormally high levels of the boundary waters between the United States and Canada to the International Joint Commission, as provided in Article IX of the "Treaty Between the United States and Great Britain Relating to Boundary Waters," signed January 11, 1909, and proclaimed May 13, 1910, requesting the International Joint Commission (1) to conduct such studies and investigations as may be necessary to determine the levels of the waters in the boundary waters within its jurisdiction which will most equitably serve the rights, obligations, and interests of the United States and Canada and their inhabitants, particularly with respect to commerce, industry, navigation, power development, agriculture, natural resources, and residential use, (2) to submit to the Governments of the United States and Canada plans for the establishment of an International Great Lakes Board of Control to coordinate the ac-

tions and decisions of all boards of control so that the water levels of the boundary waters may be maintained at the most equitable levels, within established ranges, which may be possible, and (3) to submit recommendations for such control structures or other works as may be necessary to accomplish that result.

SEC. 2. The United States section of the International Joint Commission is hereby authorized to conduct studies and investigations of the water level of Lake Michigan concurrently with, and similar to, those studies and investigations called for by the first section of this resolution, and to submit to the International Joint Commission recommendations for the establishment of a Lake Michigan Board of Control to function as an integral unit of the International Great Lakes Board of Control in coordinating the control of the water levels of the boundary waters.

JULY 8, 1953.

The Honorable HAROLD C. OSTERTAG,
House of Representatives.

MY DEAR MR. OSTERTAG: The receipt is acknowledged of your letter dated June 25, 1953, concerning the reference dated June 25, 1952, forwarded by the Governments of Canada, and the United States to the International Joint Commission under article IX of the Boundary Waters Treaty of 1909, requesting the Commission to study various questions relating to the high level of water in Lake Ontario and to make recommendations to the two Governments with regard to remedial measures. You refer to the arrangements between the United States and Canada under which the waters of the Long Lac and Ogoki Rivers were diverted from Hudson Bay into Lake Superior and request that a further reference be made to the Commission with a view to the scheduled termination of the present agreement and the establishment of orderly international machinery through which these diversions, if found to be necessary, may be placed under the joint regulation and control of the two Governments.

In order that you may have complete information regarding the existing controls exercised by the International Joint Commission through the International Lake Superior Board of Control with respect to the level of water in Lake Superior and the bases on which the reference of June 25, 1952, was drafted, the following background information is set forth:

(1) Prior to the signing of the Boundary Waters Treaty in 1909, the diversion of water from Lake Michigan through the Chicago drainage canal and its effect upon the level of water in Lakes Huron, Erie, and Ontario, and their connecting waters, was the subject of considerable objection from various interests adversely affected thereby. The International Waterways Commission, which was composed of representatives of the Governments of the United States and Canada, in two reports dated May 3, 1906, and January 4, 1907, had approved the diversion at Chicago of 10,000 cubic feet per second.

(2) Article V of the Boundary Waters Treaty of January 11, 1909, accordingly provided that the United States could authorize diversion of waters above Niagara Falls "for power purposes, not exceeding in the aggregate a daily diversion at the rate of 20,000 cubic feet of water per second" and that Canada could authorize diversion "at the rate of 36,000 cubic feet of water per second." The International Joint Commission was established by article VII of this treaty. Its jurisdiction as set forth in article III included:

"* * * in addition to the uses, obstructions, and *diversions heretofore permitted or hereafter provided for by special agreement between the Parties hereto*, no further or other uses or obstructions or diversions, whether temporary or permanent, of boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line, shall be made except by authority of the United States or the Dominion of Canada within their respective jurisdictions and with the approval, as hereinafter provided, of a joint commission, to be known as the International Joint Commission." [Italic added.]

(3) On June 30, 1913, the receiver of the Michigan Lake Superior Power Co. applied to the International Joint Commission for approval of the construction, diversion, and use of the waters of the St. Marys River on the United States side of the international boundary at Sault Ste. Marie, Mich. On October 7, 1913, the Michigan Northern Power Co. was substituted as the applicant for this order of approval. A similar application was filed with the Commission on January 21, 1914, by the Algoma Steel Corp., Ltd., of Sault Ste. Marie, Ontario for approval of the construction of works and the diversion of water on the Canadian side of the St. Marys River. An order of approval of the application of the Michigan Northern Power Co. was signed by the Commission on May 26, 1914, and a similar

order of approval of the application of the Algoma Steel Corp., Ltd., was signed by the Commission on May 27, 1914.

Paragraphs 5, 6, and 7 of the order of approval issued to the Michigan Northern Power Co. included the following "conditions as to control and operation":

"* * * 5. All compensating works heretofore built and all such works built under this order of approval and all power canals, including their headgates and bypasses, shall be so operated as to maintain the level of Lake Superior as nearly as may be between levels 602.1 and 603.6 above said mean tide at New York, and in such manner as not to interfere with navigation. The operation of all said works, canals, headgates, and bypasses for the above purposes shall be under the direct control of the board hereinafter authorized, which board shall be known as 'the board of control.'

"6. The mean elevation of Lake Superior shall be ascertained by taking the mean of the readings of at least four automatic gauges, half the number to be maintained by the United States, and half by Canada; these gauges to be located so that their combined readings will indicate as nearly as may be the mean or average condition of the whole lake. The records of these gauges shall be furnished to the board charged with the control of the compensating works referred to at such intervals as it may require.

"7. The officer of the Corps of Engineers charged with the improvement of the falls of St. Marys River on the American side and the officer appointed by the Canadian Government shall form said board, whose duty it shall be to formulate rules under which the compensating works and power canals and their headgates and bypasses shall be operated so as to secure as nearly as may be the regulation of Lake Superior as set forth herein. It shall be the further duty of said Board to see that any rules or regualtions now or hereafter made by proper authority for the control of said works are duly obeyed."

Similar provisions were contained in paragraphs 6, 7, and 8 of the order of approval issued to the Algoma Steel Corp., Ltd., with the addition in paragraph 8 of the following proviso:

"*Provided*, That said board shall consist of the same persons who will be appointed under the order of approval of the works of the said Michigan Northern Power Co., and their powers and duties hereunder may be exercised jointly over the compensating and other works on either or both sides of the international boundary."

(4) On January 5, 1925, the Supreme Court of the United States in the case of *Sanitary District of Chicago* v. *the United States* (266 U. S. 405), affirmed a decision of the District Court of the United States for the Northern District of Illinois which granted an injunction requested by the United States restraining the sanitary district from increasing the diversion beyond the amount authorized by the Secretary of War under the act of March 3, 1899 (30 Stat. 1121, 1151). The opinion of the court, which was delivered by Mr. Justice Holmes, contained the following statement:

"* * * With regard to the second ground, the Treaty of January 11, 1909, with Great Britain, expressly provides against uses 'affecting the natural level or flow of boundary waters' without the authority of the United States or the Dominion of Canada within their respective jurisdictions and the approval of the International Joint Commission agreed upon therein. As to its ultimate interest in the Lakes the reasons seem to be stronger than those that have established a similar standing for a State, as the interests of the nation are more important than those of any State." (266 U. S. 426.)

(5) The States of Wisconsin, Minnesota, Ohio, Pennsylvania, Michigan, and New York brought suit in the Supreme Court of the United States against the State of Illinois and Chicago Sanitary District to enjoin further taking of water from Lake Michigan for the purpose of carrying off the sewage of Chicago and vicinity through a drainage canal. The Supreme Court in a decision rendered on April 14, 1930, by Mr. Justice Holmes (*Wisconsin* v. *Illinois*, 281 U. S. 179), directed that a decree be entered providing for the reduction of the diversion through the Chicago drainage canal in various stages until December 31, 1938, when the average annual diversion should be reduced to 1,500 cubic feet per second in addition to domestic pumpage. The decree entered on April 21, 1930, read in part as follows:

"* * * 3. That on and after December 31, 1938, unless good cause be shown to the contrary, the defendants, the State of Illinois and the Sanitary District of Chicago, their employees and agents, and all persons assuming to act under the authority of either of them, be and they hereby are enjoined from diverting any of the waters of the Great Lakes-St. Lawrence system or watershed through

the Chicago drainage canal and its auxiliary channels or otherwise in excess of the annual average of 1,500 cubic feet per second in addition to domestic pumpage.

"4. That the provisions of this decree as to the diverting of the waters of the Great Lakes-St. Lawrence system or watershed relate to the flow diverted by the defendants exclusive of the water drawn by the City of Chicago for domestic water supply purposes and entering the Chicago River and its branches or the Calumet River or the Chicago drainage Canal as sewage. The amount so diverted is to be determined by deducting from the total flow at Lockport the amount of water pumped by the City of Chicago into its water mains and as so computed will include the runoff of the Chicago and Calumet drainage area" (281 U. S. 697).

(6) On January 27, 1938, the Canadian Minister at Washington sent a note to Secretary of State Cordell Hull inquiring whether the United States Government would be disposed to enter into an agreement with Canada to the effect that, notwithstanding the provisions of articles V and VIII of the Boundary Waters Treaty of 1909 regarding the division of the uses of boundary waters, in the event a proposed diversion was made into Lake Superior from the Kenogami River via Long Lake, the exclusive rights to the use of waters equivalent in quantity to any water so diverted should be vested in Canada and the quantity of water so diverted would be at all times available to Canada for use for power below the point of diversion so long as it continued a part of boundary waters. This proposal was not found acceptable to the United States for reasons set forth in Mr. Hull's note to the Canadian Minister dated March 17, 1938. It is understood that this is the correspondence referred to in the fourth paragraph of your letter.

(7) As a result of the outbreak of World War II and the participation of Canada therein, conversations were had between officials of Canada and the United States concerning the desirability of developing portions of the Great Lakes-St. Lawrence project in view of the possibility of a power shortage due to the need for increased supplies of power in connection with Canada's war effort and of the national defenses effort in the United States. On October 14, 1940, Mr. Adolf A. Berle, Jr., then Assistant Secretary of State, signed a note addressed to the Canadian Minister stating, among other things, that on condition that the Province of Ontario agreed to provide immediately for diversions to the Great Lakes system of waters from the Albany River Basin, which normally flowed into Hudson Bay, the Government of the United States would interpose no objection, pending the conclusion of a final Great Lakes-St. Lawrence Basin agreement between the two countries, to the immediate utilization for power at Niagara Falls by the Province of Ontario of additional waters equivalent in quantity to the diversions into the Great Lakes Basin from the Albany River Basin. This proposal was accepted by the Canadian Government in the notes of October 31 and November 7, 1940, which you also mention in your letter.

(8) An agreement between the United States and Canada was signed on March 19, 1941, relating to the Great Lakes-St. Lawrence Waterway project. Article VIII of this agreement provided as follows:

"ARTICLE VIII. The Governments, recognizing their common interest in the preservation of the levels of the Great Lakes System, agree that:

"(a) each Government in its own territory shall measure the quantities of water which at any point are diverted from or added to the Great Lakes System, and shall place such measurements on record with the other Government semi-annually;

"(b) in the event of diversions being made into the Kreat Lakes System from other watersheds lying wholly within the borders of either country, the exclusive rights to the use of waters which are determined by the Governments to be equivalent in quantity to any waters so diverted shall, notwithstanding the provisions of Article IV paragraph (c) of this Agreement, be vested in the country diverting such waters, and the quantity of water so diverted shall be at all times available to that country for use for power below the point of entry, so long as it constitutes a part of boundary waters;

"(c) if any diversion of water from the Great Lakes System or the International Section, other or greater in amount than diversions permitted in either of the countries on January 1, 1940, is authorized, the Government of such country agrees to give immediate consideration to any representations respecting the matter which the other Government may make; if it is impossible otherwise to reach a satisfactory settlement, the Government of the country in which the diversion of water has been authorized agrees, on the request of the other Gov-

ernment, to submit the matter to an arbitral tribunal which shall be empowered to direct such compensatory or remedial measures as it may deem just and equitable; the arbitral tribunal shall consist of three members, one to be appointed by each of the Governments, and the third, who will be the chairman, to be selected by the Governments;

"(d) the Commission shall report upon the desirability of works for compensation and regulation in the Great Lakes System, and, upon the approval by the Governments of any such works, shall prepare plans and specifications for their construction and recommend to the Governments an equitable allocation of their cost; the Governments shall make arrangements by exchange of notes for the construction of such works as they may agree upon."

As you doubtless know, this agreement has not received the approval of the Congress, although approval thereof has been recommended by the executive branch of the Government on a number of occasions. On November 4, 1952, the Canadian Ambassador advised the Secretary of State that in view of recent developments in respect of the construction of works in the St. Lawrence River, the Canadian Government considered that this agreement had been superseded and did not intend to take any action to have it ratified.

(9) By article I of the treaty concerning uses of the waters of the Niagara River signed on February 27, 1950, the third, fourth, and fifth paragraphs of article V of the Boundary Waters Treaty dated January 11, 1909, which provided for the unequal division of the waters of the Niagara River, were terminated, and by article VI it was provided that the waters made available for power purposes by the provisions of the treaty "shall be divided equally between the United States of America and Canada." Article III provided as follows:

"*Article III.* The amount of water which shall be available for the purposes included in Articles IV and V of this Treaty shall be the total outflow from Lake Erie to the Welland Canal and the Niagara River (including the Black Rock Canal) less the amount of water used and necessary for domestic and sanitary purposes and for the service of canals for the purposes of navigation. *Waters which are being diverted into the natural drainage of the Great Lakes System through the existing Long Lac-Ogoki works shall continue to be governed by the notes exchanged between the Government of the United States of America and the Government of Canada at Washington on October 14 and 31 and November 7, 1940, and shall not be included in the waters allocated under the provisions of this Treaty.*" [Italics supplied.]

(10) In a note dated February 27, 1952, the Canadian Department of External Affairs advised the American Embassy at Ottawa that according to a report of Canadian officials, the conclusion had been reached that the quantity of water diverted from the Hudson Bay drainage area into the Great Lakes Basin via the Long Lac and Ogoki diversions had been assumed to amount to 5,000 cubic feet per second and "the effect of this additional water on the level of Lake Ontario at times of mean flow is 0.25 feet (3 inches)." It was further stated in the Canadian report that "the amount of water diverted from the Great Lakes drainage basin via the Chicago drainage canal is now regulated by a decree of the Supreme Court of the United States, dated April 21, 1930, and is limited to an annual average of 1,500 cubic feet per second taken at about 1,800 cubic feet per second. The effect of the total diversion of 3,300 cubic feet per second on the water level of Lake Ontario at times of mean flow is 0.16 feet (2 inches)." The net effect of the Long Lac and Ogoki diversions and the Chicago diversion on the water level of Lake Ontario was found to be 1 inch.

(11) As you were advised in this Department's letter dated May 14, 1952, the diversion of waters of the Long Lac and Ogoki Rivers was brought to the attention of the Canadian Government in a note dated April 9, 1952, from the American Embassy at Ottawa to the Canadian Department of External Affairs, in which the Canadian Government was requested "to give serious consideration to terminating temporarily the diversion of waters of the Long Lac and Ogoki Rivers from Hudson Bay into Lake Superior during the present high-water level." In connection with this request, a letter dated March 29, 1952, was sent by the Department of State to the Chairman of the United States section of the International Joint Commission in which it was pointed out that the diversion of these waters pursuant to the exchange of notes on October 14 and 31 and of November 7, 1940, was originally authorized to provide increased supplies of power in consequence of Canada's war effort and of the major national defense effort in the United States at that time, and it was stated that "as it does not appear that this supply of water is required at the present time, it seems to the Government of the United States that this diversion could now be terminated during this period of high water."

(12) On May 1, 1952, the Canadian Department of External Affairs stated that the matter would be given consideration, bearing in mind the fact that these diversions "are directly harnessed to hydroelectric-power development works in Ontario, in addition to providing further supplies of water for power development in boundary waters." It was further stated in a note of May 7, 1952, of the Canadian Department of External Affairs that the Government of Ontario had indicated that the Ogoki diversion of between 3,400 and 4,000 cubic feet per second had been temporarily terminated. However, as the Long Lac diversion is directly harnessed to the Aguasabon power development, its termination, even on a temporary basis ,would create problems in the area dependent on this source of power. The view was expressed that this diversion, amounting to between 1,000 and 1,200 cubic feet per second, was comparatively small, and that the cooperation of the Government of Ontario in reducing the diversion of water into the Great Lakes to about one-quarter of the normal flow should reduce to an inconsequential amount the effect on the levels of the Great Lakes.

It was with this historical background with respect to diversion of water into and out of the Great Lakes that the reference of June 25, 1952, was negotiated with Canada. As stated in the third paragraph of your letter, the reference of June 25, 1952, to the International Joint Commission relating to the high level of the water in Lake Ontario specifically requested the Commission to study "the various factors which affect the fluctuations of water level on Lake Ontario, including * * * *any diversion of water into or out of the Great Lakes Basin*, * * *." [Italics supplied.] Pursuant to this provision of the reference, the counsel for the United States at the hearing held by the International Joint Commission at Detroit on June 4, 1953, presented to the Commission a number of exhibits, including House Joint Resolution 262 and your statement accompanying it concerning the diversion of the Long Lac and Ogoki Rivers into Lake Superior and regarding diversion of waters of Lake Michigan through the Chicago drainage canal. Col. John D. Bristor, United States member of the International Lake Superior Board of Control, testified regarding its work and filed a report.

As it is believed that the present reference of June 25, 1952, authorizes the Commission to consider and to make recommendations regarding the effect of these diversions, and as the Commission has already received considerable evidence concerning them at the Detroit hearing, it is considered inadvisable to request the Canadian Government at this time to amend the language of the present reference.

You will be advised of further developments concerning this matter.

Sincerely yours,

THRUSTON B. MORTON,
Assistant Secretary,
(For the Secretary of State).

STATEMENT OF HON. CLEMENT J. ZABLOCKI, FOURTH DISTRICT, WISCONSIN, SUBMITTED TO THE COMMITTEE ON PUBLIC WORKS, HOUSE OF REPRESENTATIVES, IN THE COURSE OF HEARINGS ON LEGISLATION DEALING WITH LAKE MICHIGAN WATER DIVERSION

Mr. Chairman, I appreciate this opportunity of submitting the following statement on the legislation being considered by your committee, to permit the Sanitary District of Chicago to divert water from Lake Michigan into the Mississippi Basin at a rate considerably higher than the one established by the Supreme Court of the United States in 1930.

The supporters of this legislation have steadfastly maintained that their proposal merits favorable action because it would contribute to the solution of the high water level problem afflicting the Great Lakes Basin. This argument was particularly advanced last year, when the rising waters of Lake Michigan were effecting great damage to lakeshore properties. However, the claims of the proponents of this proposal were contradicted by the findings of responsible authorities, and therefore I must take issue with them.

I am not unmindful of the grave problems which arose as a result of the rise in the level of the Great Lakes. The properties and fortunes of thousands of American citizens, living in the Great Lakes Basin, were engulfed by the encroaching waters. I also fully realize that unless some means are found to cope with this problem, increasingly expensive and tragic developments may occur in the future.

The fact remains, however, that by permitting a higher rate of water diversion through the Chicago Sanitary Canal, we will not alleviate the difficulties which

plague the Great Lakes region. A report submitted not long ago by the United States Lakes Survey, Corps of Engineers, showed that the effect of the Chicago Sanitary District diversion, even in an augmented form, would be of extremely small magnitude when one considers the condition of critically high water levels. In addition, the report pointed out that several years—even as many as 10—would be reqiured before such a diversion could produce its ultimate effect.

It would appear advisable, therefore, to judge the merits of this legislation on the basis of other factors. The proposal before your committee has been advanced by a single Lake Michigan shore community, and it should be judged in the light of the effect which it would have on the other communities in that region.

As I stated earlier, it has been pointed out that increased diversion through the Chicago Sanitary Canal would be of little help in dealing with the high water problem. On the other hand, such increased diversion could have very serious effects when the level of the lakes is low. It is this latter factor that should be carefully considered by your committee.

During periods of low water levels, the Great Lakes shipping operations are at times severely threatened. Under such low water level conditions, a difference of several inches can necessitate the dredging of all commercial Lake Michigan harbors, and disrupt shipping activities. This, in turn, can entail considerable expense to the taxpayers of that region—an expense which could be brought about, or magnified, by the proposed increased rate of water diversion at Chicago.

It is because of these factors that I want to urge your committee to give careful and thorough consideration to the full ramifications of the legislation before you. The bills which have been introduced during the present Congress on the subject of Lake Michigan water diversion contain certain improvements over the previous versions of this legislation. Nevertheless, I feel that a more thorough study of this entire problem is warranted. An exhaustive review of all pertinent factors may reveal a way in which the solution of the high water level problem can be furthered, and the needs of the city of Chicago can be met, without endangering the life and shipping activities of all the other port communities on Lake Michigan.

Mr. DONDERO. Congressman Simpson is here and desires to introduce some of the witnesses who are to come before us.

Congressman Simpson, I might say yesterday Attorney Lawrence J. Fenlon was given permission to include his statement in the record. He handed it to me this morning and I tender it for the record.

Congressman O'Hara, if you have a statement to include in the record it will be received and made a part of it.

STATEMENT OF HON. BARRATT O'HARA, MEMBER OF CONGRESS FROM THE SECOND CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. O'HARA. Thank you, Mr. Chairman.

I would like an opportunity to answer my dear friend Noah Mason, but I appreciate your situation. If I may be granted permission I will file my statement.

Mr. DONDERO. I think it would be better if you would do that, Congressman.

Mr. O'HARA. Thank you.

(The statement of Congressman O'Hara is as follows:)

BARRATT O'HARA, A REPRESENTATIVE FROM ILLINOIS

Mr. Chairman and members of the committee, as the representative of the Second District of Illinois I am appearing here today in support of the proposed legislation authorizing a withdrawal of the waters of Lake Michigan to the extent of 2,500 cubic feet per second to flow into the Illinois Waterway. The present authorization of 1,500 cubic feet per second is tragically inadequate.

I am grateful to the chairman and the members of the committee for the opportunity so graciously extended. At the outset I wish to stress the unanimity among the members from Cook County, Ill. Both Republican and Democratic delegations from our area are solidly behind this measure. It is proper, too,

to mention that an increased authorization for a withdrawal of water adequate to serve the needs of the Illinois Waterway was the end sought in bills introduced in many Congresses by our late beloved dean, Hon. A. J. Sabath.

I listened with nostalgic interest to the testimony of our colleague, Hon. Noah Mason, for whom I have not only deep respect but warm affection. He and I were born in the same year. We share a common background of memories, our boyhood in the same era of Huckleberry Finn glamor, our first legislative experiences in the senate chamber in Springfield, Ill.

Mr. Chairman, may I suggest that since Noah Mason and I were boys there have been great changes? I do not know that they have brought greater happiness to men and women. I do not know that the days of the kerosene lamp, the outhouse, the barefoot boy with fishing pole over his shoulder, were not more filled with the simple joys of life than the present period. But it is not our job as legislators to judge the needs of the present in terms of our nostalgia for the past. In his testimony Mr. Mason refers to the magnificent sturgeon which rewarded the fisherman in his boyhood days, sturgeon which he says have been driven out of the Illinois River since the completion of the Illinois Waterway. If he would see fishlife restored, then Congressman Mason should work to increase the flow of water permitted to Chicago and the sanitary district through the legislation now under consideration by this committee. However much we love the aura of the past, we should be happy to accept the benefits of progress.

Chicago now has the largest and most efficient sewage disposal plant in the world. This plant services, besides Chicago, 74 suburbs. It disposes of 1,100 million gallons of waste every day. From this waste 92.5 percent solid matter is removed and converted into fertilizer. The 7.5 effluent, which remains, is a clear liquid requiring the addition of oxygen to render it wholesome for fish life, and also to dilute the nitrogen content. This latter, because it promotes plant growth, has the effect of hindering navigation. Hence it is that we in the city of Chicago who are seeking from this Congress authority to increase to 2,500 cubic feet per second the water diversion from Lake Michigan to the Illinois Waterway really would restore to reality Mr. Mason's boyhood dreams of mamouth sturgeon in the fishing grounds of his youth.

Among the opponents of this legislation are the Great Lakes shipping interests who claim that a withdrawal of 2,500 cubic feet per second will lower lake levels to the detriment of Great Lakes shipping. Scientific studies made by a body of engineers appointed for the purpose, have indicated that the rise and fall of lake levels, which follow a natural cycle, are 6 feet, whereas the 2,500 cubic feet contemplated diversion would lower lake levels eight-tenths of 1 percent, a negligible amount. When the suit of the Great Lakes States was instituted in the early 1920's, lake levels were going down, following the natural cycle, which covers a period of approximately 23 years. Since then the high-water level has been reached resulting in floods which have damaged commercial properties, homes, and beaches in the Great Lakes area. Many of the property owners who were antidiversionists in the early twenties are now urging, not that we divert the 2,500 cubic feet per second contemplated in this legislation, but that we return to the 10,000 cubic feet per second which was cut to 1,500 cubic feet per second by order of the Supreme Court.

Antidiversionists maintain that Congress is without authority to grant increased diversion since the Supreme Court has spoken and limited the diversion to 1,500 cubic feet per second. This is far from the fact since Mr. Justice Hughes acting as a special master in chancery in the diversion case stated: "Provision should be made for further study when the sewage treatment plant (at Chicago) is completed."

And Mr. Justice Holmes, who wrote the opinion in *Wisconsin* v. *Illinois* (1930) 281 U. S. 179, 197–199), declared:

"* * * These requirements as between the parties are the constitutional right of those States, subject to whatever modification they hereafter may be subjected to by the Congress acting within its authority. It will be time enough to consider the scope of that authority when it is exercised * * *

"* * * All action of the parties and the Court in this case will be subject, of course, to any order that Congress may make in pursuance of its constitutional powers, and any modification that necessity may show should be made by this Court. * * *"

Clearly the Supreme Court was rendering its decision in a specific case and not precluding the Congress from further action based upon subsequent developments. Among these subsequent developments have been (*a*) the building of sewage disposal plant at Chicago; (*b*) the rise in the lake level as part of a natural cycle of rise and fall.

The development of an Illinois Waterway from the earliest history of the State has been regarded as a matter of joint concern by the Congress and the State. In March 1827, Congress granted the State of Illinois 284,000 acres of public land for "the purpose of aiding the State in opening a canal to unite the waters of the Illinois River with Lake Michigan." Since then the development of a waterway connecting the Illinois River with Lake Michigan has received both State and Federal aid, the State building locks, canals, and dams, Congress appropriating funds for dredging and navigation projects.

In 1908 the voters of Illinois approved a constitutional amendment to authorize the expenditure of $20 million for a waterway to connect the Chicago drainage canal at Lockport, with the navigable Illinois River at Utica * * * The Illinois Legislature, June 1919, pursuant to the referendum vote of 1908 passed the Illinois Waterways Act and authorized the sale of $20 million of bonds to finance the construction of this 9-foot lock and dam project, from Lockport to Utica. Construction thereafter proceeded until 1930 when all the State funds were exhausted, and work estimated at $7,500,000 remaining unfinished.

Congress in the River and Harbor Act of July 3, 1930, extended the Federal navigation project in the Illinois River up through the Illinois Waterway and on through the main channel and the Calumet-Sag Channel of the Sanitary District of Chicago to connect with the Federal navigation projects in the Chicago and Calumet Rivers and appropriated $7,500,000 to complete the Illinois Waterway.

The Illinois Waterway was completed at Government expense by March 1, 1933, and officially opened June 22, 1933. The report on the water needed for the waterway was made September to December 1933 (H. Doc. 184, 73d Cong., 2d sess.). The report of the United States district engineer, September 26, 1933, and by the Board of Engineers for Rivers and Harbors, November 13, 1933. It was approved in general by the Chief of Engineers December 6, 1933, and transmitted to Congress by the Secretary of War, December 7, 1933.

The general conclusion of this report was that the diversion of 1,500 cubic feet per second annual average from the Lake Michigan watershed, in addition to domestic pumpage, was sufficient to meet the direct (flotation) needs of the waterway, but that indirect needs in the matter of securing satisfactory sanitary conditions for those aboard vessels or employed at terminals, could not be determined until after the waterway had been fully completed, the sewage-treatment plans of the sanitary district placed in full service, and the diversion limited to 1,500 cubic feet per second for a sufficient period of time (suggested at not more than 2 years) to observe conditions as they might then exist.

A further conclusion in this report by Col. Dan I. Sultan, 1933, was to the effect that the water authorized by the 1930 act for the Illinois Waterway would result in low water floor of 2,400 cubic feet per second in the Illinois River. This amount was inadequate to provide 9-foot navigation in the lower Illinois River, then improved in accordance with the 1927 project, which required about 5,000 cubic feet per second diversion. Therefore, the complete canalization of the Illinois River was recommended, involving the removal of the Kampsville lock and dam, the rebuilding of the LaGrange lock and dam, the construction of a new lock and dam in the Illinois River near Peoria, and a new lock and dam in the Mississippi River at Alton. This recommendation was adopted by Congress August 30, 1935, and the existing improvement of the Illinois River has been constructed in accordance with that recommendation.

Since the completion of the waterway in terms of recommendation adopted by Congress in 1935, traffic on this waterway has grown from 2,171,374 tons in 1936 to 17,617,941 tons in 1951, the latest figures made available in the report of Chief of Engineers, United States Army, 1952. The 1951 traffic includes 79,844 tons of imports and exports to Canada, 50,464 tons of coastwise (via New York State Barge Canal, Oswego) receipts, 365,485 tons of lakewise shipments, 4,857,818 tons of goods exchanged within the limits of the waterway, 6,172,174 tons from the Mississippi to ports on the Illinois Waterway, and 1,310,481 tons downbound (outbound), in other words, destined for ports on the Mississippi.

Picking at random some of the items carried, we have paper pulp, newsprint, coal, fuel oil, gasoline, kerosene, grains, soybeans, coaltar products, chemicals, fertilizer, animals and animal products, textiles, metals, building materials, heavy machinery, electrical equipment, spices, coffee, sugar. Clearly the Illinois Waterway is a system of arteries carrying the lifeblood of commerce to and from the State of Illinois.

The legislation which this committee is considering should be reported favorably because it is designed to promote the physical as well as the economic health of the State of Illinois.

Mr. DONDERO. Congressman Simpson.

STATEMENT OF HON. SID SIMPSON, MEMBER OF CONGRESS FROM THE 20TH CONGRESSIONAL DISTRICT OF ILLINOIS

Mr. SIMPSON. Mr. Chairman, as a former member of the old Rivers and Harbors Committee, I appreciate the time you have allotted the people from the 20th Illinois District in opposition to this legislation.

I am in a little bit of a difficult position for the simple reason that I do not have any prepared statement. I realize the other Members of the House have filed theirs, except for Mr. Mason. I wonder if the committee would digress from its procedure and grant me 5 minutes?

Mr. DONDERO. Without objection.

Mr. SIMPSON. I would be glad to file a statement if I had one, but I do not, and, without being facetious, if this committee, on which I used to serve on the old Rivers and Harbors part of it, is similar to the Agriculture Committee, of which I am a member, I do not very often read a filed statement.

Mr. DONDERO. We would be glad to hear you off the cuff.

Mr. SIMPSON. Mr. Chairman, it seems to me the issue involved here is to bypass a Supreme Court decision. I know a Supreme Court decision can be bypassed, because it was in the first part of this Congress in the tidelands bill. As I see it, that is exactly what this legislation proposes to do.

There is one thing I would like to call this committee's attention to. Chicago is located in the southwest curve of Lake Michigan. There is no part of Chicago that I know of east of Lake Michigan. In other words, the lake flows north and empties into the St. Lawrence River. It does not flow southwest. I do not think there is a drop of water in Lake Michigan that naturally flows southwest. It flows northeast and there isn't a part of it that is affected by it until it is diverted.

The Illinois River has about a three-quarters of an inch fall to the mile from Lockport to the mouth of the river at Grafton in the 20th Illinois District. That is not much of a natural fall and when the river is at flood stage it does not have that much.

The city of Beardstown is very much interested in this legislation for this reason. Former Mayor Ring and the present Mayor Tillitt will testify in their behalf, but I wish to add a little part I had to play in it.

Beardstown is situated on the bank of the Illinois River and was established in the days of the canoes and rafts, when they did not have any overland transportation. It is just barely above the river bank on a piece of ground as flat as this table. It is 3 to 4 miles back to the ground where the people can go if they have floods.

In 1943 they had to evacuate over 3,000 women and children and old folks out of that town. Had the wall across the river not broken, relieving the pressure at Beardstown when there were troops there sandbagging it, Beardstown would have been flooded to a height of about 10 feet.

Several years ago, back sometime in the 1920's, the State of Illinois and the city of Beardstown paying the funds themselves, built a seawall 28 feet high to protect that city.

Mr. DONDERO. What is the population?

Mr. SIMPSON. 6,000 roughly.

The engineers at that time told the people of that city that that wall would protect them forever from any flood. In 1943, at the request of our office, President Roosevelt sent troops in there to help sandbag that seawall. They sandbagged it up to, as I recall it, around 34 feet. So the engineers' estimate of the height of that wall was not adequate.

I have forgotten my dates, but when Albert Engel was chairman of the Civil Functions Appropriations Committee of the House, in the summer when the river was within its banks, 100 feet of that seawall crumbled and fell into the river. That was in part due to the fact that these larger barge lines and diesel engines are churning the ground underneath the foundations of that seawall. Anyway, it crumbled and fell.

Mr. Engel had the engineers in Beardstown on Monday morning after it fell in Friday night, and they repaired that. We had an authorization in this Congress a few years ago for $5 million for further protection to the city of Beardstown. We received probably $70,000 of planning money. We get sympathy but no funds—in the last Congress and in this one.

The people of Beardstown are apprehensive. They do not want any more water. They want less water. I do not think there is any stench down as far as Beardstown. I do not think we want any more pushed down there either.

There are 14 bills before your committee, as you all know. Judge Jonas' bill is H. R. 3300, which I understand is the bill probably to be considered. Seven Republicans from the city of Chicago, Members of the House, and seven Democrats, have introduced companion or similar bills. They seem to be evenly divided.

I live 275 miles from Chicago. I am not very familiar with the city at all, but it seems to me this is the first time in reading the Chicago papers that I have seen the Chicago Republicans and the Chicago Democrats agreed on anything. They seemed perfectly agreed on this.

Mr. ANGELL. They agree on the smell.

Mr. SIMPSON. On what?

Mr. ANGELL. On the smell.

Mr. SIMPSON. They would have to. I don't care whether it is a Republican smell or a Democratic smell. We don't want to smell it.

Judge Jonas' bill—and I have not read all of them—states:

> That, in order to regulate and promote commerce among the several States and foreign nations and to protect, improve, and promote navigation and navigable waters in the Illinois Waterway and Mississippi Valley, and help control the lake level, and to afford protection to property and shores along the Great Lakes, and to provide for a navigable Illinois Waterway, the State of Illinois and Sanitary District of Chicago, under the supervision and direction of the Secretary of the Army, are hereby authorized to withdraw * * *.

Ladies and gentlemen of this committee, there is not one word mentioned as to any benefits in any of the bills that I know of for the Chicago Sanitary District. It is to help control the lake level and afford protection of property and provide a navigable Illinois Waterway. It does not say anything about the Chicago Sanitary District to help push sewage downstream.

Anyone knows if you get a little more water it should be purifying itself in a certain period of time, but it seems to me the people who

drafted this legislation should state the definite purpose of what it is for. The first thing is to help the Chicago Sanitary District.

If I were a Chicago Representative, be it a Democrat or Republican, I would be on the Chicago Sanitary District's side. But I represent the counties downstate that have the Illinois River flowing through the middle of them and I am trying to represent the standpoint of the district I represent.

I have no ill will toward Chicago or the sanitary district, but they created a 9-foot channel in the Illinois and Mississippi Rivers. That was purposely done for navigation. These barges that go up and down the river and for which the people of the United States are taxed in order to create a waterway or a hard road, if you please, to keep out the snags and the sandbars to help the Shell Oil Co. and the Standard Oil Co. in their wealthy businesses run barges up and down the river. At the same time they are holding the water higher in the drainage districts in the area I represent, and the Federal Government is paying an annual capitalized damage and an annual damage to those drainage districts because of that higher water table. So you have more than just sanitation involved. You have a little bit of everything.

But I do think the truth ought to come out here, which is that this legislation, in my opinion, is just as much to help the Chicago Sanitary District. I would not blame them if they put it right in this bill, but apparently they have not done so. They have said it is for navigation and to control the lake level.

I can appreciate the fact that the people who have built summer homes on the lakes and who have homes there that are about to be floated into Lake Michigan are suffering, but those are summer homes. We are trying to protect our permanent homes down the river. The people where I live only have one home. They do not go north in the summer and south in the winter.

I would like now to call on the mayor of Beardstown, Mayor Tillitt.

Mr. DONDERO. Are there any questions from any members of the committee?

(No response.)

Mr. DONDERO. If not, thank you very much, Mr. Simpson, for your statement.

We will now hear Mayor Tillitt.

STATEMENT OF HON. GLENN TILLITT, MAYOR OF THE CITY OF BEARDSTOWN, ILL.

Mayor TILLITT. I am Mayor Tillitt of Beardstown, Ill., and I wish to file an objection by the city of Beardstown, Ill., to the water diversion bill and any provision which would permit or provide for the increase in excess 1,500 cubic feet per second of water from Lake Michigan to the drainage canals of the Sanitary District of Chicago, which would eventually discharge into the Illinois River.

Mr. DONDERO. Mayor, do you want to read your statement, or would you rather file it and make a brief oral statement? I made a little mistake before when I said that there are 7 witnesses; I notice that there are 10 witnesses. I am trying to fix the time so that everybody will be heard.

Mayor TILLITT. I would like to read it, if I could. If I cannot, then all right.

Mr. DONDERO. Proceed in your own way.

Mayor TILLITT. Thank you.

Beardstown, Ill., is a city of approximately 6,300 population, located on the south bank of the Illinois River in Cass County, Ill., and is the largest city in that area for a radius of 31 miles.

Beardstown industries consist of a division point of the Burlington Railroad with its shops and roundhouse; Beardstown Milling Co.; flour, feed mills and grain storage elevators; Continental Grain Co. elevators; Wells Lamont leather-glove factory; Baltimore & Ohio Railroad Terminal; Schmitt Memorial Hospital; Delta Tank Manufacturing Co.; agriculture center and many smaller industries. It is served by U. S. Route 67, Lincoln Highway, Illinois State Route 100, and has two bridges leading into the city with a new bridge under construction over the Illinois River.

Beardstown, Ill., is a city more than 100 years old.

The United States Government has constructed five locks and dams in the Illinois River and maintains them, helping to keep the river at a higher level for navigation purposes. Beardstown took no part in the decision to construct these locks and dams.

The proponents of the bills to increase the diversion from Lake Michigan have argued the need for such diversion of water from Lake Michigan into the Illinois River for navigation purposes and to remove sewage from the Chicago River and the canals of the Sanitary District of Chicago.

In the year of 1898 Chicago was permitted to reverse the flow of the Chicago River, causing it to flow into the Illinois River instead of Lake Michigan. This reversal caused the loss of water to the Great Lakes area—where Mother Nature intended the waters to go—and carried into the Illinois River the sewage from the city of Chicago.

The Illinois River was a source of drinking water supply for people and animals and a source of food from the fish that thrived in its relatively pure waters until the sewage from Chicago was turned in. Now the water is dangerous as a supply for drinking purposes and fish life has been seriously damaged or destroyed.

Chicago didn't want their source of drinking water in Lake Michigan polluted, yet it created pollution hazards for people living downstream.

Another result occurred by the diversion of the water from Lake Michigan, and that was to lower the lake levels of the Great Lakes. This became so serious that on January 14, 1929, the Supreme Court of the United States of America in a decision written by the then Chief Justice William Howard Taft upholding the report of Charles Evans Hughes as special master, ruled that the Sanitary District of Chicago should reduce its diversion of water from Lake Michigan and proceed to construct sewage treatment and disposal plants.

Wisconsin, et al. v. *Illinois, et al.* (278 U. S. Supreme Court 367–421. 73 Law Edition 426–436). On page 421 the Court said:

> It, therefore, is the duty of this Court by an appropriate decree to compel the reduction of the diversion to a point where it rests on a legal basis, and thus to restore the navigable capacity of Lake Michigan to its proper leval. The sanitary district authorities, relying on the argument with reference to the health of its people, have much too long delayed the needed substitution of suitable sewage plants as a means of avoiding the diversion in the future.

Therefore, they cannot now complain if an immediately heavy burden is placed upon the district because of their attitude and course. The situation requires the district to devise proper methods for providing sufficient money and to construct and put in operation with all reasonable expedition adequate plants for the disposition of the sewage through other means than the lake diversion.

The city of Beardstown is protected from the flood waters of the Illinois River by a concrete seawall and levees approximately 3,200 feet in length, protecting said city and 580 acres of land adjacent thereto from inundation by flood waters of the Illinois River.

The Beardstown seawall and protecting levees were constructed in the year of 1927 and 1928, following a flood of the Illinois River which occurred in October 1926.

At the time of the construction of the seawall and the earthen levees there was formed a sanitary district known as the Sanitary District of Beardstown. This district incorporated all of the city of Beardstown and certain lands adjacent thereto. The citizens in the Sanitary District of Beardstown voted a tax for the purpose of constructing sewers to handle the storm water, waste water, and seepage, and conduct the same to a pumping station at the southwest side of the city, where the same is discharged out oft he district by two electrically driven pumps.

Following the construction of the seawall and the levees protecting the city and Sanitary District of Beardstown areas, a serious flood condition arose in the Illinois River during the month of May 1943, and the floodwaters thereof reached a stage of 29.8 feet on the Beardstown River gage, which is 449.6 feet mean sea level Beardstown.

In this flood of May 1943, the river stood 2.1 feet above the top of the seawall at Beardstown, but the floodwaters were held back from the city by means of pipes set in the seawall to which were fastened planks and heavy asphalt roofing paper as a sealer, with sandbags to reinforce the planking. During the critical period of time about 4,200 citizens of Beardstown were evacuated. The balance left were able-bodied persons who aided in the protection of the city.

Fortunately for the citizens of Beardstown a large group of United States Army soldiers were available in this area and were assigned to assist in the battling of floodwaters at Beardstown. Illinois called out as many of their National Guard men as they could spare. Guards were stationed all through the city to protect all homes and property from any looting that might occur. More than 200,000 sandbags were used; 80 carloads of crushed stone were used; and many, many tons of sand. Had it not been for the availability of the troops and the supreme effort put forth by the citizens of Beardstown and the further fact that the wind was blowing from the city toward the northwest when the flood stood at its highest elevation, the city of Beardstown would probably have been destroyed, as the water would have been of sufficient depth to have taken most of the frame houses off their foundations and destroy the greater portion of the business district.

During the flood of 1943 the measurement of the flow of the water at Beardstown was 115,000 cubic feet per second, and when computed with the flood height that means approximately 3,800 cubic feet per second of water for every foot in height on the river gauge. So if the rate of diversion from Lake Michigan were increased as much as 1,000 cubic feet per second it would mean practically a 3-inch raise on the flood level at Beardstown, and 3 inches of water during the flood of 1943 would have been enough to wreck the seawall and levees

and destroy the city. This is our conclusion based upon the figures which have been submitted by the War Department engineers and appears in many of their pamphlets and data furnished to the United States Government.

It is not our intention to say that the increased height of the river at Beardstown is not partially caused by the construction of levees along the Illinois River, because the Illinois River is now practically channelized by levees constructed, and we also know that the five locks and dams which the United States Government constructed in the Illinois River add to the increased height of the floodwaters. However, the construction of the levees and the construction of the locks and dams are matters over which the citizens of Beardstown and the Sanitary District of Beardstown have no control and we must accept them as they exist, but we are strongly opposed to any increased diversion from Lake Michigan which would increase the flood hazard to the city of Beardstown.

We have appealed from time to time to Congress through our Congressmen and the Senators from the State of Illinois, through the War Department, and every agency we thought could assist us, seeking aid for the citizens of Beardstown by way of additional flood protection. Since the cause of our floods is in our opinion not our fault but the fault of the Government, Government agencies or other agencies over which the citizens of Beardstown have no control, we believe we are justified in asking your honorable body at this time to vote unfavorably for an increase in diversion of water from Lake Michigan and to recommend, if possible, that the city of Beardstown be afforded adequate flood protection.

Mr. ANGELL. Thank you very much, Mayor.

Are there any questions?

Mr. NEAL. I would like to ask one question.

Mr. ANGELL. Dr. Neal.

Mr. NEAL. Mr. Mayor, is your estimate of 3 inches based upon a normal river flow, or on a flood?

Mayor TILLITT. On flood. 1,000 cubic feet raises the river 3 inches at Beardstown, per second.

Mr. NEAL. You are sure of that?

Mayor TILLITT. That was on flood-level stages on the river gage.

Mr. NEAL. Thank you.

Mr. ANGELL. Are there any other questions of Mayor Tillitt?

Mr. MACHROWICZ. Yes.

You referred to the decision of the Court as final in having determined that matter. Is that your opinion?

Mayor TILLITT. I have the law here.

Mr. MACHROWICZ. Is it not also stated in that decision that this matter should be reexamined after the construction of proper sewage disposal plants?

Mayor TILLITT. I do not have that.

Mr. MACHROWICZ. That is the way that the matter has been presented to us yesterday, as I remember it. Those sewage disposal plants have now been constructed.

Mayor TILLITT. I have the whole law here, word for word.

Mr. MACHROWICZ. These sewage disposal plants have been constructed, and what we are trying to do by this bill is to have a study made by the Corps of Engineers. Do you have any objection to that?

Mayor TILLITT. Well, I don't want any more water down there as long as I am mayor.

Mr. MACHROWICZ. Of course, before we decide whether more water should go down or not we should have a study. Do you agree with that?

Mayor TILLITT. No; I don't.

Mr. BECKER. Why should he agree with that?

Mayor TILITT. I would not agree with it.

Mr. MACHROWICZ. You do not think a study should be made?

Mayor TILLITT. I do not want any more water. It may be you want a study to be made. I don't. I understand what Chicago is up against—the flow in the Chicago River. We were not supposed to get that water in the first place.

Mr. MACHROWICZ. Of course, this committee must consider what the people of Chicago are up against, and what you are up against, and find an equitable solution.

Mayor TILLITT. Would they have been up against it if they had not changed the flow of the Illinois River?

Mr. MACHROWICZ. That is not before this committee at the present time.

Mayor TILLITT. That's right. I know it is not.

Mr. MACHROWICZ. They have asked for a 2,000 cubic foot per second increase. This bill proposes a 1,000 cubic foot per second increase for a period of only 3 years, pending a study by the Corps of Engineers.

Mayor TILLITT. If you give it to them now they will be back next year for more, and it will be going on and on and on.

Mr. MACHROWICZ. It will be up to us to decide whether or not they get any more, pending a report by the Corps of Engineers.

Mayor TILLITT. That is right.

Mr. SCUDDER. Mr. Chairman.

Mr. ANGELL. Mr. Scudder.

Mr. SCUDDER. Mr. Mayor, you would not be opposed to the engineers making a survey as set forth in the first part of this bill to try to establish the most practical way of lowering the water level to prevent flood stages, would you.

Mayor TILLITT. I am not opposed to it in that case, but 3 years is a long time. It is a 3-year bill, isn't it, for 3 years of water diversion?

Mr. SCUDDER. That is what they are asking for in the interim, while the Corps of Engineers are making their survey to recommend a plan for stabilizing the lake levels. If they go ahead with strictly a diversion survey to lower the flood stages in Lake Michigan, it would not be objectionable should they develop other plans, and at the end of the 3-year period discontinue the lost diversion water.

Mayor TILLITT. I am still opposed to the flow.

Mr. BECKER. Mr. Chairman, I think what the mayor is hedging on a little bit here, and I think he is justified, is that this bill does not say to make a survey or investigation. The outcome of the survey and investigation is to provide or increase the flow from 1,500 to 2,500 cubic feet per second. That is the object of the survey. You have a definite objective in here. It is not just calling for $200,000 for a survey to see what is needed. The objective of the survey is to see the results of an additional 1,000 feet of water down that river.

If you are going to have a different bill or amendment of some kind, then you have a different bill.

Mr. MACHROWICZ. Will the gentleman yield?

Mr. BECKER. Surely.

Mr. MACHROWICZ. The bill says the survey will be to determine the effect—

if any, in the improvement in conditions in the Illinois Waterway by reason of the increased diversion herein authorized * * *

Mr. BECKER. But it distinctly specifies a total annual average of 2,500 cubic feet of water per second.

Mr. MACHROWICZ. Yes. For a period of 3 years.

Mr. BECKER. That is the objective, isn't it?

Mr. MACHROWICZ. For a period of 3 years. A permanent action will be taken after 3 years.

Mr. BECKER. The point I am trying to make is, it does not make any difference whether the objective is for 1, 3, or 5 years. The objective of the survey has one distinct object. It is not for a general investigation to see what is best, or what the outcome might be, but that is the objective.

Mr. MACHROWICZ. No. The objective as stated by the bill is to have a recommendation made as to the increase or decrease in the amount of the diversion.

Mr. MCGREGOR. Will the gentleman yield for a question?

Mr. MACHROWICZ. Yes.

Mr. MCGREGOR. Is this not an international problem? Should we not take Canada into consideration before any definite action is taken on this subject?

Mr. MACHROWICZ. You are raising another question than the one raised there.

Mr. BECKER. That was raised yesterday.

Mr. MACHROWICZ. Yes. As to the purposes of this bill, the investigation is to be made by the Corps of Engineers to determine whether or not there should be an increase or a decrease in the amount of the diversion.

Mr. MCGREGOR. The present witness raised the question, and if the gentleman will yield, should not Canada be taken into consideration when that survey is made by the Army engineers?

Mr. MACHROWICZ. That was answered yesterday. Since there is no material effect upon the height of the level of the Great Lakes, I do not believe that Canada has to be taken into consideration.

Mr. MCGREGOR. There is a material effect on it, and regardless of yesterday, the question is still pertinent.

Mr. MACHROWICZ. That is in the Supreme Court decision.

Mr. MCGREGOR. When you reduce the water level you are reducing the tonnage of operation of certain types of vessels, and that has a material effect and makes a material difference in the problem.

Mr. MACHROWICZ. Eight-tenths of an inch would hardly be considered a material diversion.

Mr. MCGREGOR. If I remember the testimony of last year, 1 inch made up in the hundreds of thousands of tons of difference on payloads. That is from memory of last year—if I am wrong I ask for correct information.

Mr. DONDERO. May I suggest that the committee proceed as fast as we can. We have 9 witnesses still to hear in 1 hour. We can discuss that a little later.

Mr. ANGELL. Mr. Mayor, this bill seems to provide a study for the purpose of determining the effect of this diversion on the Illinois River. Are the people along the Illinois River anxious to have this survey made for that purpose?

Mayor TILLITT. There are none of them down our way who want it.

Mr. ANGELL. Do you know of anybody on the Illinois River who wants the survey made for the purpose of turning more water into it and the effect thereof?

Mayor TILLITT. Not down my way. Every inch you raise the river causes us to pump more water. Drainage has to be pumped down there, and if it comes up an inch it costs us much more. The people down there are opposed to it very much.

Mr. STAUFFER. How about the people living along the Mississippi River? Wouldn't they have the same feeling you would have?

Mayor TILLITT. They are farther down the line.

Mr. STAUFFER. Yes; but I have heard of floods down there and the breaking of levees.

Mayor TILLITT. They have floods and we have floods. We have plenty of them. That is the only worry we have down there, is more floods.

Mr. SCUDDER. Is the area adjacent to where you are located the one to be benefited by an appropriation that was made yesterday in the House of some $48,000,000, to take care of seepage water?

Mayor TILLITT. No.

Mr. SCUDDER. I think it is Mr. Simpson's amendment.

Mayor TILLITT. No. The people on the Mississippi get the benefit of that.

Mr. SCUDDER. But you have the same effect on your land?

Mayor TILLITT. It is the same effect, but it is the ones on the Mississippi River that get the effect of that.

Mr. DONDERO. Thank you, Mr. Mayor, for your testimony.

Mr. SIMPSON. The next witness is ex-Mayor George E. Ring, of Beardstown, Ill.

I have asked him to file his statement and make a very brief statement, and he will answer any questions you may have.

At the conclusion of the witnesses from the Illinois district I would like permission to file a letter from the Illinois Fisheries Council.

Mr. DONDERO. Without objection, permission is granted.

Do you have a statement prepared for the record, Mr. Ring?

STATEMENT OF GEORGE E. RING, FORMER MAYOR OF THE CITY OF BEARDSTOWN, ILL.

Mr. RING. My name is George E. Ring, president of the Sanitary District of Beardstown, Ill. I served 16 years in public office and went through several floods, so I think I know what I am speaking about.

Mr. DONDERO. Do you want to file your statement for the record?

Mr. RING. Yes, I have a statement to file, but I would like just to say a few words.

Mr. DONDERO. Very well.

(The statement of Mr. Ring is as follows:)

To the Honorable Members of the Rivers and Harbors Subcommittee, House Public Works Committee.

GENTLEMEN: My name is George E. Ring, former mayor of the city of Beardstown, Ill.

I was not advised of this hearing until last Monday morning. Since time limits, I wish to direct your attention to one matter vital to the citizens of Beardstown, Ill.

In 1926 Beardstown suffered a severe flood loss and in the year 1928, with the help of the State of Illinois, the Burlington Railroad, the Baltimore & Ohio Railroad, and the citizens of Beardstown, a seawall and protecting levees were constructed to protect Beardstown from the floodwaters of the Illinois River to a height on the Illinois River gage of approximately 27.5 feet above low water which at mean sea level (m. s. l.) is 447.5 feet. This seawall and levees extend about 3,200 feet along the riverfront at Beardstown.

The citizens of Beardstown voted a tax and constructed a combined storm and sanitary sewer system for approximately 1,470 acres of land, which includes the entire city of Beardstown and adjoining land areas.

In 1943 the river at Beardstown reached a 29.8 river stage measured on the gage at Beardstown or an elevation of 449.6 mean sea level. The discharge at Beardstown in cubic feet amounted to 115,000 cubic feet per second, or an average of approximately 3,800 cubic feet per second for every foot in the elevation of the river. So for every 3,800 cubic feet per second-feet of water diverted from Lake Michigan through the Chicago Sanitary District Canal into the Illinois River will on that basis alone increase the height of the river at Beardstown 1 foot.

In 1943 the Illinois River floodwaters stood approximately 2 feet above the top of the seawall at Beardstown and were held back by a board barrier constructed out of 2-inch by 12-inch planks which were braced and backfilled with sandbags. Every able-bodied citizen of the city of Beardstown participated in the defense of the city from the floodwaters at that time. In addition, the State of Illinois furnished National Guard troops and the United States Army furnished all the troops who were available in this area to assist in this flood work. Large numbers of State trucks and sand loaders were also sent to the assistance of the city. The population of the city was evacuated and troops patrolled the city; only able-bodied workers remained.

We have on many occasions appealed through our representatives for assistance from the United States of America to increase our flood protection. It has been recommended by the War Department engineers, yet no appropriation for construction has been made.

Beardstown is one of the oldest cities on the Illinois River. It is older than the city of Chicago and the Government, by constructing a system of locks and dams (there being five in number along the Illinois River) and letting the Sanitary District of Chicago divert waters from Lake Michigan into the Illinois River, a serious flood hazard has been created to our city.

Therefore, we respectfully urge no favorable action be given to the bills to increase the flow of water of Lake Michigan into the Illinois River until such a time as the city of Beardstown has been protected and safeguarded against the flood danger which would be created in the event of diverting additional water from Lake Michigan.

Respectfully submitted.

GEORGE E. RING,
Former Mayor of the City of Beardstown, Cass County, Ill.; President of the Board of Trustees of the Sanitary District of Beardstown, Cass County, Ill.

Mr. RING. We have a cottage north of Beardstown, close to Browning, Ill.

Mr. DONDERO. How far is Beardstown from Chicago, Mr. Ring?

Mr. RING. Two hundred and forty miles. It took us all night to fly here last night. We haven't been to bed.

Mr. MACHROWICZ. Is that the fault of the Sanitary District of Cook County?

Mr. RING. I do not live there. I do not know. We have fishing baskets there—all my friends do—and I help them open them—and

nets. Two weeks ago on Sunday I helped open these fishing baskets and they had bunches of sludge and solids on them that big around. I wonder where that came from.

If you had seen the fish we took out of there you would not want to eat them, I know, because it is just filth. There is some filth coming down from upstream. We are 9 miles up river from the locks and dams, and there is very little current in our river at that place. So I think we are the cesspool for the Chicago Sanitary District. The Government built it. In the last few years the Government built a levee directly across the river at the end of our bridge 5 feet higher than our seawall. So if we have one more flood that levee over there won't break—we are going to break.

In 1943 they called me out and I started in with a bunch of high-school boys and girls to unload gravel and sand off the barge. It got so serious they called in the United States Army and all of the neighboring towns came in to help us. There were 1,400 soldiers there. Had they not been there Beardstown would have been wiped off the map.

In 1926 we had 42 inches of water in our business houses. In 1927 we moved out of our place three different times up until last June, because of floodwaters. You could see 3 to 4 feet deep down in that water. It was no flash flood or rainfall. I think it came from Lake Michigan. That is my idea.

So in going through all of that stuff and putting on a pair of rubber boots and working 6 days and 6 nights and never taking your clothes off, and losing your business—I have a good home and Mr. Tillitt has a lot of money invested in the town, and we think we should have a right to object to this bill.

I want to file these statements here and I will be glad to answer any questions.

Thank you.

Mr. DONDERO. Are there any questions by members of the committee?

Mr. MACHROWICZ. Mr. Ring, I think in fairness to the people of Cook County we ought to get one thing straightened out. You spoke of fish.

Mr. RING. Yes, sir.

Mr. MACHROWICZ. As you know, the people in Chicago have built very modern sewage-disposal plants.

Mr. RING. So have we.

Mr. MACHROWICZ. Is it not probable that the sewage you spoke of came from some place south of Chicago, and not from Chicago?

Mr. RING. Do you fish?

Mr. MACHROWICZ. Yes.

Mr. RING. Did you ever fish in the channel for stripers?

Mr. MACHROWICZ. I have not been fishing for the last few years. I have been working here in Congress.

Mr. RING. You won't. Fine fish won't live in the channel. They can't live there.

Mr. MACHROWICZ. I am trying not to put all of the blame on Chicago. It has been shown here they have as good a purification system as they can possibly have.

Mr. RING. It is not 90 percent.

Mr. MACHROWICZ. It is 92- and-some-odd percent. There has been nothing here to refute that.

Mr. RING. Have you gone down the channel to Joliet and seen the birds walking across the water on the solids?

Mr. MACHROWICZ. I have never been in Joliet.

Mr. RING. You should look it over.

Let me make one more statement. If this committee will come to Beardstown, the people of Beardstown will pay your way down there if we can't prove every statement we have made here.

Mr. DONDERO. Thank you very much, Mr. Mayor.

Mr. RING. Thank you very kindly.

Mr. SIMPSON. That concludes any witnesses that requested our office to ask for time for them.

Mr. DONDERO. Very well.

(The statement of the Illinois Fisheries Council is as follows:)

ILLINOIS FISHERIES COUNCIL,
Havana, Ill., July 9, 1953.

Hon. SID SIMPSON,
House of Representatives,
Washington, D. C.

DEAR SIR: It has come to my attention that the Chicago Sanitary District is again pushing bills to increase diversion from Lake Michigan through the Illinois River. I understand that Chicago Sanitary District trustees will appear to testify on July 15 at a hearing of the House Public Affairs (Works) Committee on these bills. I believe there are a total of some seven bills which have been introduced on this subject.

I again wish to call to your attention the solid opposition of downstate Illinois to this increased diversion. This opposition, of course, includes the commercial fishermen of the State, and continued opposition is quite important to them. May I, therefore, solicit your aid in defeating these bills to increase diversion? I hope that they can be defeated in committee, and if they should reach the floor of the House I hope that defeat can be their lot at that point. If, however, passage seems likely, then I urge you to offer an amendment making the increased diversion rate a maximum rate and not an average.

As the law now reads, diversion is allowed at the rate of 1,500 cubic feet per second average. This means that by manipulation the sanitary district can from time to time pass a maximum diversion of 10,000 cubic feet per second, and by holding down diversion below the 1,500 cubic feet per second figure, reach an annual average within the allowable rate. Any increased diversion allowed will simply permit a prolonging of this maximum diversion period when 10,000 cubic feet are passed. It, therefore, becomes apparent that if an increased diversion rate is to be allowed in the sum of 2,500 cubic feet per second, or any other figure, that it is highly important that amendment be added to make the 2,500 cubic feet per second a maximum figure and not an average.

Within the last week the Illinois River has raised from 4 to 7 feet at various points along its middle range. This is not due to natural causes, since there has not been enough rainfall to account for any such raise. I presume, therefore, that we must now be in a period of maximum diversion through the sanitary district. The havoc caused by the sudden raise in water level is easy to comprehend without lengthy explanation. It is such as this that downstate wishes to be protected against.

Trusting that you will give this matter serious consideration and that the best intersts of your constituents will persuade you to oppose these bills both in committee and on the floor of the House should they reach that point, I remain

Yours very truly,

HOWARD S. WHITE, *Attorney.*

Mr. DONDERO. Is Mr. Vernon W. Thomson, attorney general of the State of Wisconsin, here?

Mr. MCGREGOR. Mr. Chairman, I would like to present a statement sent to me by Hon. William O'Neill, attorney general of Ohio, who appeared before this committee last year in opposition to this legisla-

tion. Because of the press of duties it was impossible for him to be here, and I would like at this point to file his statement and it certainly is worth read and his points are well taken.

Mr. DONDERO. Without objection, it will be made a part of the record.

(The statement of C. William O'Neill, attorney general of Ohio, is as follows:)

STATEMENT OF C. WILLIAM O'NEILL, ATTORNEY GENERAL OF OHIO, IN RE H. R. 3191–4197, 3208–3214, AND 3300

The legislation represented by the referenced bills pending before the Public Works Committee of the United States House of Representatives is of critical importance to the State of Ohio. These bills purport to authorize increased diversion of water from the Great Lakes-St. Lawrence watershed through the Chicago drainage canal over and above the amount fixed by the decree of the United States Supreme Court, dated April 21, 1930 (281 U. S. 696).

The State of Ohio has a shoreline of 251 miles bordering on Lake Erie. On this shore are located the important port cities of Toledo, Port Clinton, Put-in-Bay, Kelly's Island, Marblehead, Sandusky, Huron, Vermillion, Lorain, Cleveland, Fairport, Ashtabula, Conneaut, and some lesser ones. The combined amount of tonnage entering and leaving these important port cities is tremendous. In addition, all along the lakeshore large investments have been made by these Ohio cities to provide for the handling of lakeborne commerce. I would hesitate to estimate the total investment represented by these port and navigation facilities. These facts alone would demonstrate a critical interest by the people of Ohio in any proposal for additional diversion of the waters of the Great Lakes system through the Chicago drainage canal.

However, from time to time in the past Ohio citizens living on the lakeshore, or owning property on the lakeshore, have had an even more critical interest in any proposed diversion for the problem of beach erosion along this shoreline has been of vital interest throughout our State. High waters of Lake Erie have caused extensive damage along the shoreline. At the present time, I am informed that the level of Lake Erie is 1.2 feet lower than at the same time 1 year ago. Damage as a result of erosion is therefore substantially less. Certainly, however, no State has greater cause for interest in any proposal which would alleviate the loss of property value which occurs fom time to time and on the other hand, no other State has more interest in a proposal which would directly affect lake commerce and all the important industry directly dependent thereon.

It is my understanding that the evidence before you indicates that the proposed diversion would lower the lake levels not more than 1 inch in 10 years and this would be of no help in curing or reducing damage to riparian property along Lake Erie due to the high lake levels and storms. Col. W. P. Trower, United States Army Corps of Engineers, division engineer for the Great Lakes area, has stated that the effect of any diversions from the Great Lakes would be too minor to bring about any diminishing of property damage (Chicago Suntimes, February 29, 1952, p. 46). Col. Wm. N. Harris, of Detroit, district engineer of the Army Engineer Corps, United States lake survey, addressing a regional conference of the American Society of Engineers on May 10, 1952, said that those who believe that today's problems arising out of high lake levels may be corrected by diverting waters of the Great Lakes are engaged in wishful thinking (Milwaukee Journal, May 11, 1952). Other authorities likewise are in agreement that diversion at Chicago is no answer to solving the present problem of high lake levels. To our way of thinking, therefore, this legislation cannot find its justification in a lessening of the harmful beach erosion or shoreline erosion.

However, it is equally clear, and I am appearing here today to give emphasis to the fact that Ohio is deeply concerned over the threatened impairment of our port facilities and of our lakeborne commerce and of our industrial facilities dependent thereon. The coal, iron, steel, oil, rubber, and other industries in Ohio must depend upon the economical transportation over the Great Lakes for their continued prosperity. Additional diversion of the waters from the Great Lakes system through the Chicago drainage canal, during a period of low lake levels, will cause substantial damage to industry in Ohio which needs the Great Lakes for transportation. Freight and dredging costs will surely go higher. While a 1 inch lowering of lake levels would be of no help in reducing damages on

the shoreline, such a lowering would cause a loss of 100 tons per boat, per trip, or a total loss of about 2 million tons per season for the lake commerce.

Surely these are reasons, in the light of the present international situation demanding a maximum of steel production compelling enough for me to urge Ohio's opposition to the proposed legislation, but I feel that it is equally true that this whole problem of diversion has been labored over for many years in other quarters and that further consideration of the problem could more rightly and more profitably be had in other forums. I am sure that this committee is familiar with the fact that the decree of April 21, 1930, of the Supreme Court of the United States was obtained only after years of involved, costly, and protracted litigation (278 U. S. 367, 1929; 281 U. S. 179, 1930).

The issues and problems of diversion were thoroughly studied during this litigation. The State of Ohio, along with the other Lake States, thereafter was compelled to defend this victory in the Supreme Court in 1932–33, 1940–41 and again in 1950 (287 U. S. 578, 1932; 289 U. S. 395; 1933; 289 U. S. 710, 1933; 309 U. S. 569, 1940; 313 U. S. 547, 1941; and 340 U. S. 383, 1950). In 1938 and in subsequent years the Lake States, including Ohio, were compelled to oppose Chicago's attempts before congressional committees, various Federal officials and agencies, two Presidents and their Secretaries of War, to obtain an increased diversion at Chicago. It is our feeling that this legislation is another in a long chain of moves to nullify or circumvent the limitations imposed by the decree of the United States Supreme Court, which I have previously mentioned. The Supreme Court has expressly retained jurisdiction of the subject matter of the above bills and the proper, and I would think only forum, for an application for increased diversion of waters from the Great Lakes is in that Court. The Court has the machinery, and in this instance, certainly a wealth of experience and precedent, to rule upon such applications. The Court has heard similar applications many times, both at the instance of the State of Illinois and also on petition of the opposing Great Lakes States (see decree of April 21, 1930, par. 7, 281 U. S. 696; 287 U. S. 581, 1932; 289 U. S. 395, 1933; 309 U. S. 569, 1940; 340 U. S. 383). It must constantly be borne in mind that Ohio, as well as the other States bordering upon the Great Lakes, has a proprietary interest in the waters of those lakes. It is not, therefore, for the Federal Government by its action to vitally affect what is essentially the property of Ohio. These proposals, affecting as they do tremendous industrial facilities and investment and involving constitutional questions of the preference of ports of other States over those of the State of Ohio, and of questions of depriving the State of Ohio and its citizens and property owners of their property without due process of law and affecting deeply the sovereign rights of the State of Ohio, should surely more properly be discussed and heard before the Supreme Court.

I would also like to point out that the matter of increased diversion at Chicago is one of more than mere local or national concern. It is a matter of international concern because it involves the boundary waters. I think that this question has been dealt with before this committee by representatives of both the International Joint Commission and the Department of State. Certainly the matter of increased diversion at Chicago involves such complicated and complex legal and international problems, as well as technical engineering problems of water uses, navigation, erosion, variations of lake levels, damages to shore property, and other practical problems that this committee should not act hastily upon these bills.

I think it also worth while to point out that a possible long-term solution to the problem of extreme high and extreme low levels on the Great Lakes may be found in the adoption of an interstate or international compacts by the eight States bordering on the Great Lakes whereby the levels of the lakes are stabilized through the construction and operation of regulating works. Such a compact, under the Constitution, to be legal must first be adopted by the State Legislaures, approved by Congress, and then ratified by a Canadian treaty. These eight States should work in cooperation with the United States Army Corps of Engineers to consider the possibility of such a compact.

The State of Ohio sometime ago participated in a conference sponsored by the Council of State Governments wherein the eight States bordering on the Great Lakes joined in a resolution recommending a study by the United States Army engineers and the establishment of a joint conference committee to seek a solution to the mutual problems arising out of the fluctuating lake levels of the Great Lakes.

In the light of these critical problems and the many ramifications thereof, together with the suggested procedures for solution, I respectfully suggest that the committee decline to act favorably on these bills.

Mr. DONDERO. Mr. Thomson, we will be glad to hear you. Have you a written statement?

STATEMENT OF VERNON W. THOMSON, ATTORNEY GENERAL OF THE STATE OF WISCONSIN

Mr. THOMSON. I have a statement, Mr. Chairman, that has been filed with the clerk.

Mr. DONDERO. Very well.

Mr. THOMSON. Mr. Chairman and members of the committee, a little more than a year ago, in a statement which I filed with your committee, I pointed out that Wisconsin had participated in a conference at which all eight Lake States were represented and joined in a resolution recommending that a study be made by the Army engineers of the mutual problems arising out of the fluctuating levels of the Great Lakes. I am informed that such a study is now under way, and within a reasonable period of time, possibly 2 years, we will have sound engineering recommendations concerning possible methods of management of the levels of the lakes.

On behalf of Wisconsin, I want to enter our objections to any tampering with the levels of any of the Great Lakes until such study has been completed.

A year ago the Great Lakes were at their highest level since 1929, and in August of 1952 Lake Michigan reached an elevation of 582.7 feet. We all recall the extensive shore damage which all the Great Lakes States—Wisconsin as well as the others—suffered from the high waters. A suggestion was advanced at that time that Illinois—that is, the city of Chicago and its sanitary district—should be allowed to increase its diversion of Lake Michigan waters through the drainage canal as a means of minimizing shore damage. I pointed out that over the course of a year the maximum diversion that could take place through the drainage canal would lower the Lake Huron-Michigan Basin only about 1½ inches, and that this amount of lowering would make no contribution to the prevention of lakeshore damage.

I further pointed out that the natural level of the Lake Huron-Michigan Basin fluctuates as much as 4 feet over a period of 3 years. The record now shows that as of June 1953 the level of Lake Michigan has already fallen, as the result of natural causes, to a level of 581.98 feet. That is, there has been a decrease as a result of natural causes of seven-tenths of a foot. Based on previous experience we may anticipate that this decrease in level will continue over the next 2 or 3 years.

Accordingly, it would appear that any claim that diversion of water through the drainage canal will minimize shore damage must fail.

On the other hand, as the waters recede, any unnecessary lowering of the level will have a severe and detrimental effect on shipping in the Great Lakes, and upon the carrying capacity of the Great Lakes fleet. It has been estimated that at a period of low water 1 inch of draft can make a difference in that carrying capacity of as much as 1,800,000 tons of shipping.

It is for this principal reason that the State of Wisconsin, along with the other Lake States, was compelled to initiate action in the Supreme Court of the United States, which after long and costly litigation resulted in the decree of April 21, 1930, which ordered the Sanitary District of Chicago to reduce its diversion to the present level of

1,500 cubic feet per second, plus domestic pumpage, which makes a total of 3,200 cubic feet per second (278 U. S. 367 (1929), 281 U. S. 179 (1930)).

We were thereafter compelled to defend that victory in the Supreme Court in 1932–33; 1940–41; and again in 1950 (287 U. S. 578 (1932); 289 U. S. 395 (1933); 289 U. S. 710 (1933); 309 U. S. 569 (1940); 313 U. S. 547 (1941); and 340 U. S. 383 (1950)).

The Supreme Court has retained jurisdiction under its decree and I respectfully suggest to you that the Supreme Court is the only proper forum for an application for increased diversion of water. We are prepared to defend that decree as long as necessary.

May I further point out to you that not only are the eight Lake States interested in the levels of the lakes, but since all except Lake Michigan are boundary waters the Dominion of Canada has an interest in the levels. This interest of Canada is recognized by the treaty which established the International Joint Commission, which was negotiated on January 11, 1909. I am informed that in the past the State Department has taken the position that the regulation of the water levels is within the jurisdiction of the International Joint Commission, and that the United States cannot take unilateral action to affect those levels.

I respectfully suggest to you that this matter is properly a subject for negotiation between all of the eight Lake States concerned, and the appropriate representatives of the Government of Canada. Wisconsin is always ready to enter into any such negotiation.

I further respectfully suggest to you that it is both unfair and unsound to attempt any solution of the problem of lake levels which does not take into consideration the legal rights and property interests of all the States concerned. It is likewise unfair to surrender control of such a great natural asset as the Great Lakes to a single State or agency of that State.

Finally, may I suggest to you that the waters of the Great Lakes themselves under our controlling decisions are trust property of all the riparian States. They are not the property of Congress, and Congress' sole power of control of those waters is based on its power to control and regulate commerce—that is, navigation, between the several States. While these bills allege that one of the purposes is to promote navigation, no competent evidence can be obtained that this diversion is necessary for the purposes of navigation in the drainage canal and the Illinois River.

For the foregoing reasons I suggest to you that the proposals in these bills are presently beyond the power of the Congress, and that their passage at the present time and in their present form can only lead to unnecessary and expensive litigation. I urge you to wait upon the final report of the Army engineers.

Mr. DONDERO. Mr. Thomson, I have one question. Who sought the forum of the courts in the first instance?

Mr. THOMSON. The riparian States, to protect their trust interest in the waters of the Great Lakes.

Mr. DONDERO. That is when an application was made for the diversion of water at Chicago?

Mr. THOMSON. To prevent the excessive diversion of that water.

Mr. DONDERO. Are there any questions from the left?

(No response.)

Mr. DONDERO. Are there any questions from the right?

Mr. MACHROWICZ. I would like to ask one question, Mr. Chairman.

Mr. DONDERO. Mr. Machrowicz.

Mr. MACHROWICZ. I would like to know whether it is true as stated to us yesterday that the Supreme Court decision did contain a statement that the matter of increased diversion, if any, should be examined after the construction of the sewage-disposal plants?

Mr. THOMSON. Yes. It can be reexamined by the Court, but I do not think Congress has the power to divert water through this channel.

Mr. MACROWICZ. That is not specifically stated in the decision.

Mr. THOMSON. That is my understanding of the decision.

Mr. MACROWICZ. Not as it was read yesterday.

Mr. THOMSON. That is our understanding of the law.

Mr. MACHROWICZ. You have no objection, as I gather it, to that section of the bill that calls for a study by the Corps of Engineers?

Mr. THOMSON. We are in favor of a study by the Corps of Engineers, but are very much against the diversion of the water during the interim.

Mr. MACHROWICZ. That is all.

Mr. DONDERO. Thank you very much, Mr. Thomson, for your statement.

Mr. THOMSON. Mr. Chairman, I would like to file with the committee a telegram I received from my office, which reads as follows:

> Letter received this morning from Attorney General Frank G. Millard, of Michigan, advises it will not be possible for his department to be represented at the water diversion hearing. He states, "You may, however, inform the committee that the attorney general of Michigan has not changed his position in regard to the diversion through the Chicago Drainage Canal and believes that the jurisdiction of this diversion should remain with the Supreme Court of the United States where it is now lodged."

Also I was advised that the Honorable C. William O'Neill, of Ohio, had filed a statement with the committee. I had a memorandum on this telegram to that effect also.

Mr. DONDERO. The telegram will be received and made a part of the record.

Mr. THOMSON. Thank you very much.

(The telegram referred to is as follows:)

MADISON, WIS., *July 15, 1953.*

HON. VERNON W. THOMSON,
Attorney General of Wisconsin,
Care Washington Hotel:

> Letter received this morning from Attorney General Frank G. Millard, of Michigan, advises it will not be possible for his department to be represented at the water-diversion hearing. He states, "You may, however, inform the committee that the attorney general of Michigan has not changed his position in regard to the diversion through the Chicago Drainage Canal and believes that the jurisdiction of this diversion should remain with the Supreme Court of the United States where it is now lodged."

STEWART G. HONECK,
Deputy Attorney General of Wisconsin.

Mr. DONDERO. Hon. Daniel W. Hoan, president of the Great Lakes Harbor Association and member of the Milwaukee Board of Harbor Commissioners.

I understand he is not here.

The next witness listed is Mr. Harry C. Brockel, municipal port director and member, Board of Harbor Commissioners, Milwaukee, Wis.

I understand he also is not here.

Our next witness will be Adm. Lyndon Spencer, president of the Lake Carriers' Association.

Mr. Spencer, we will be glad to hear you.

STATEMENT OF ADM. LYNDON SPENCER, PRESIDENT OF THE LAKE CARRIERS' ASSOCIATION

Mr. McGregor. It has not been my privilege to know Admiral Spencer personally, but we have a lot of mutual friends; and of course, coming from the great State of Ohio I know he has a great deal to say that will be of interest to all.

Admiral Spencer. Mr. Chairman and members of the committee, I have a prepared statement which I have submitted to the clerk. I will not take the time to read the whole statement, but I would like to read a part of it and summarize the rest of it.

Mr. Dondero. Proceed in your own way, Admiral.

Admiral Spencer. Mr. Chairman and gentlemen, by name is Lyndon Spencer and I am president of the Lake Carriers' Association, with offices in Cleveland, Ohio.

I appreciate the privilege of appearing before you to comment on the many bills introduced in this session of Congress to authorize further diversion of the waters of the Great Lakes through the Chicago Drainage Canal. There are at least 13 of these bills, numbered from H. R. 3192 to H. R. 3197, both inclusive, from H. R. 3209 to H. R. 3214, both inclusive, and H. R. 3300.

So much has been said on the subject of diversion of the waters of the Great Lakes through the Chicago drainage canal that very little new information can be presented. The subject has been studied by Secretaries of War, the Supreme Court, and Congress since 1922. It is regrettable that Congress has to give time to the subject year after year.

Each time the matter comes up, slightly different reasons are given to justify further diversion. In all 13 bills now up for consideration, exactly the same reasons for increasing the diversion at Chicago are given. It might be well to examine those various reasons, which are as follows:

(1) Regulate and promote commerce among the several States and foreign nations: Any regulation that will result from these bills will do more harm than good. Further diversion will retard rather than promote commerce by water. By far the greatest part of the waterborne commerce of the United States is that carried over the Great Lakes and further diversion will be injurious to this traffic.

(2) Protect, improve, and promote navigation and navigable waters in the Illinois Waterway and Missouri Valley: Increased water is likely to be harmful rather than helpful to navigation in these waters because of increased currents. Any possible advantage in these waters would be at the expense of Great Lakes navigation and navigation waters.

(3) Help control the lake level: Increased diversion will lower the level of not just one lake but of all the Great Lakes except Lake Superior, but will not control the lakes' levels because no consideration is given to seasonal and cyclical variations in lake levels.

(4) Afford protection to property and shores along the Great Lakes: Little protection can be afforded by any method that does not make

provision for the natural variations in lake levels. Before any appreciable effect would be evident, the lake levels, in following a natural fluctuation curve, will have fallen to a point where the danger to shore property will be absent and many property owners will be complaining that they are being ruined by low water.

(5) Provide for a navigable Illinois Waterway: The Illinois Waterway is now navigable. It was designed to operate efficiently on the amount of water now being diverted from the Great Lakes. That it is so operating is clearly shown by the increase of traffic on the waterway which, in the past 10 years, has nearly tripled.

As stated before, diversion through the Chicago drainage canal lowers all the Great Lakes except Lake Superior. All the experts agree that in round numbers Lakes Michigan and Huron will be lowered by 1 inch for each 1,300 cubic feet per second so diverted. That would be the effect on Lakes Michigan and Huron, and slightly less on Lake Erie and Lake Ontario. If we take 1,000 cubic feet in addition to what is going on now we will have a lowering of the Lakes Michigan and Huron of 0.8 of an inch. It does not sound like very much, but when you consider the traffic moving over the Great Lakes it will amount to the loss of 1,600,000 tons a year less traffic that could be carried over the lakes.

Mr. DONDERO. Waterborne commerce over the Great Lakes, as I recall it, represents about one-quarter of the waterborne commerce of this Nation.

Admiral SPENCER. I would put it higher than that. We carry over 200 million tons a year up there.

Mr. MACHROWICZ. I think probably there is an error in this summary, or maybe I misunderstood you. You stated this action would lower the level of Lake Huron about 0.8 of an inch.

Admiral SPENCER. Yes.

Mr. MACHROWICZ. Your statement here said it would lower Lake Huron 2 inches.

Admiral SPENCER. That was based on an additional 2,500 cubic feet per second. I understand the latest bill allows an additional 1,000 feet only.

Mr. MACHROWICZ. You want to correct that?

Admiral SPENCER. I have corrected that in the statement I submitted to the committee. I thought you were going to take 2,500 cubic feet, but I see the bill only calls for 1,000. These bills come so fast I have not been able to keep up with them. But the figure should be 1,600,000 tons.

Mr. MACHROWICZ. That paragraph 4 of your summary should be corrected to read 0.8 of an inch instead of 2 inches and 1,600,000 instead of 4 million.

Admiral SPENCER. That is right.

Mr. DONDERO. Is there anything else?

(no response.)

Mr. DONDERO. Thank you very much, Admiral, for your statement.

Admiral SPENCER. I would like to point out the importance of these cargoes carried over the Great Lakes, not only the volume but the importance of the materials themselves. When you stop to think of it—85 percent of the ore used in the steel manufacturing of the country is carried over the lakes—you can see it has a great effect not only

on our national economy year by year but a tremendous effect on the defense effort of this Nation at any time.

Mr. DONDERO. I want to say to you, Admiral, that the chairman of this committee tried to impress that fact on members of this committee at another hearing.

Mr. MCGREGOR. The members will recall that hearing.

Admiral SPENCER. If there are any questions, I will be glad to answer them; and if not, I will let the statement stand as corrected.

Mr. DONDERO. The statement will be received and made a part of the record.

Admiral SPENCER. Thank you.

(The prepared statement of Admiral Spencer is as follows:)

IN THE MATTER OF FURTHER DIVERSION OF WATER FROM THE GREAT LAKES

SUMMARY

Bills bring up matter studied since 1922 and again propose action denied for 30 years.

None of the five reasons given by the bills is valid or will be accomplished by the proposed action.

Diversion affects all Great Lakes except Lake Superior.

Proposed action would lower Lake Huron by 2 inches and could decrease seasonal carrying capacity of fleet by 4 million tons.

Cargoes on the Great Lakes are important to national economy and vital to any defense or war effort.

Lowering of lake levels increases hazards of navigation.

All bills introduced by representatives of just 1 of the 8 States bordering the Great Lakes.

Required report could present only one side of the picture.

One segment of transportation would be robbed without benefit to any other part of the industry.

Mr. Chairman and gentlemen, my name is Lyndon Spencer and I am president of the Lake Carriers' Association with offices in Cleveland, Ohio. I appreciate the privilege of appearing before you to comment on the many bills introduced in this session of Congress to authorize further diversion of the waters of the Great Lakes through the Chicago drainage canal. There are at least 13 of these bills numbered from H. R. 3192 to H. R. 3197, both inclusive, from H. R. 3209 to H. R. 3214, both inclusive, and H. R. 3300.

So much has been said on the subject of diversion of the waters of the Great Lakes through the Chicago drainage canal that very little new information can be presented. The subject has been studied by Secretaries of War, the Supreme Court, and Congress since 1922. It is regrettable that Congress has to give time to the subject year after year.

Each time the matter comes up, slightly different reasons are given to justify further diversion. In all 13 bills now up for consideration, exactly the same reasons for increasing the diversion at Chicago are given. It might be well to examine those various reasons, which are as follows:

(1) Regulate and promote commerce among the several States and foreign nations.

Any regulation that will result from these bills will do more harm than good. Further diversion will retard rather than promote commerce by water. By far the greatest part of the waterborne commerce of the United States is that carried over the Great Lakes and further diversion will be injurious to this traffic.

(2) Protect, improve, and promote navigation and navigable waters in the Illinois Waterway and Mississippi Valley.

Increased water is likely to be harmful rather than helpful to navigation in these waters because of increased currents. Any possible advantage in these waters would be at the expense of Great Lakes navigation and navigable waters.

(3) Help control the lake level.

Increased diversion will lower the level of not just one lake but of all the Great Lakes except Lake Superior, but will not control the lakes' levels

because no consideration is given to seasonal and cyclical variations in lake levels.

(4) Afford protection to property and shores along the Great Lakes.

Little protection can be afforded by any method that does not make provision for the natural variations in lake levels. Before any appreciable effect would be evident, the lake levels, in following a natural fluctuation curve, will have fallen to a point where the danger to shore property will be absent and many property owners will be complaining that they are being ruined by low water.

(5) Provide for a navigable Illinois Waterway.

The Illinois Waterway is now navigable. It was designed to operate efficiently on the amount of water now being diverted from the Great Lakes. That it is so operating is clearly shown by the increase of traffic on the waterway which, in the past 10 years, has nearly tripled.

As stated before, diversion through the Chicago drainage canal lowers all the Great Lakes except Lake Superior. All the experts agree that in round numbers Lakes Michigan and Huron will be lowered by 1 inch for each 1,300 cubic feet per second so diverted and Lakes Erie and Ontario will be correspondingly lowered by approximately seven-tenths of an inch.

Six of the bills under discussion would authorize a further diversion of 3,500 cubic feet per second while the remaining 7 would authorize 2,500 cubic feet per second. If only the lesser of these 2 amounts were authorized, Lakes Michigan and Huron would be lowered by approximately 2 inches. Two inches may sound like a rather negligible amount, but let us see what the effect of lowering the water by this seemingly small amount will have.

Since almost all of the heavily laden vessels pass through Lake Huron we need consider only the effect on that lake of an increased diversion of 2,500 cubic feet per second. The final effect would be the lowering of the lake by approximately 2 inches. It must be remembered that this lowering applies to the water levels at their low points as well as their high points and it must be further remembered that the draft to which vessels may be loaded depends on the water level.

If all the vessels enrolled in our association had their safe draft reduced by 2 inches, the annual loss in carrying capacity would be nearly 4 million tons of cargo. I do not intend to imply that right now a reduction of 2 inches would mean that much loss in cargo, but even now when the lake level is high, some of our vessels are not able to load to capacity and as the water level continues to fall the number of vessels affected will increase until the ultimate loss would reach the figure previously given.

The cargoes carried over the Great Lakes are always important to the national economy and are of utmost importance in times of war or national police actions. About 85 percent of the iron ore used in the manufacture of steel in the United States is transported over the Great Lakes. I leave to your imagination what might have happened to our war efforts if the water levels of the lakes had been reduced by 2 inches during the years 1942 to 1945 and 4 million tons less of iron ore had been delivered in each of those years.

In considering the effect, we must remember that the result of diversion cannot be turned off and on like a water faucet. Several years are required for the ultimate effect to be reached, whether it be a lowering of the lake levels after diversion is started or a raising of the levels after diversion is stopped. As a matter of fact, if the diversion proposed by these bills were started today, its full effect would not be reached by January 31, 1956, which is the date by which a report of the effect of the increased diversion would have to be made to Congress. A period of from 5 to 6 years is necessary before the full effect of any change in diversion is reached.

For several years the lake levels have been high, the peak apparently having been reached in 1952. It is clearly apparent that the downward cycle has now started, because this year Lake Huron is about 7 inches lower than it was last year. It is most likely that this lowering will continue for several years to come. How long this will last or what low level will be reached, no one can predict.

A lowering of the waters in the Great Lakes by further diversion would increase the hazards of navigation as well as reduce the carrying capacity of the vessels. Rocks and shoals would come closer to the surface, channels and turning basins would be made shallower and narrower and movement in and out of harbors would be made more difficult. Congress would soon be deluged with

requests for funds to deepen channels and harbors presently maintained by the Corps of Engineers. Justification for the necessary funds would not be difficult in view of the importance of the cargoes transported on the Great Lakes.

I am sure we have all noticed that all 13 bills were introduced by Representatives from just 1 State. If these bills were going to promote commerce among the several States and foreign nations, help control lake levels, and afford protection to property and shores along the Great Lakes, surely some of the 144 Representatives from the 7 other States bordering the lakes would have joined in sponsoring the proposed legislation.

Please note, too, that the Secretary of the Army is to report only on whether the increased diversion has improved conditions in the Illinois waterway. He is not to say anything about the injurious effect increased diversion will have on the Great Lakes. The proponents must realize that the benefits would be much more than offset by the losses resulting from the action proposed by these bills. All these bills will do is to take water from the Great Lakes where it is helping to support a vital segment of the transportation industry and send it down an artificial waterway where in no way will it benefit any other segment of transportation. This is a case where Peter would be robbed but Paul would never be paid.

Mr. DONDERO. Thank you very much, Admiral.

Mr. Gilbert R. Johnson, counsel of the Lake Carriers' Association, Cleveland, Ohio.

Mr. Johnson, we will be glad to hear from you.

STATEMENT OF GILBERT R. JOHNSON, COUNSEL, LAKE CARRIERS' ASSOCIATION, CLEVELAND, OHIO

Mr. JOHNSON. Mr. Chairman and members of the committee, may I file my statement for the record? It is not long, but I think it would save time if I commented briefly on it.

Mr. DONDERO. It will be received and made a part of the record.

(The statement of Gilbert R. Johnson is as follows:)

STATEMENT OF GILBERT R. JOHNSON, COUNSEL, LAKE CARRIERS' ASSOCIATION, CLEVELAND, OHIO

There is much that has been said over the years on the legal issue raised by any proposal that the Congress authorize a greater abstraction of the waters of the Great Lakes into the Mississippi River system than is permitted by the decree of the Supreme Court of the United States. It seems to me, however, that the issues are narrowed to two: (1) Whether or not the Congress has any right to authorize the diversion of the waters of the Great Lakes to another watershed; and (2) whether or not any additional diversion is permitted by the Boundary Waters Treaty of 1909.

It will be recalled that the decree of the Supreme Court was entered in the ancient controversy between the State of Illinois, acting through its creature, the Chicago Sanitary District, and the seven other States bordering on the Great Lakes. That controversy was settled by the Court, exercising its equity jurisdiction conferred by the Constitution of the United State (*Wisconsin* v. *Illinois*, 278 U. S. 367). The decree was entered only after exhaustive consideration of the evidence and of the rights and conveniences of the States and the people of the Great Lakes area and a determination of the amount of water which, under all the evidence and the law, may be abstracted from Lake Michigan by the State of Illionois. While the decree was originally entered on April 21, 1930, the decree has been reconsidered on several occasions on the application of the State of Illinois. Even thought the Congress had the power to destroy or modify the decree of the Court, the Congress would be acting rashly and arbitrarily by taking action and it is unthinkable that the Congress would, under our constitutional system of the separation of powers, invade the field of the judiciary and nullify its work.

It is not, however, within the power of Congress to make such disposition as it wills of the waters of Lake Michigan. These waters belong to the people of all of the Great Lakes States (*Wisconsin* v. *Illinois*, supra). The United States has no proprietary interest in them (*Pollard* v. *Hagan*, 3 How. (U. S.) 212;

Martin v. *Waddell*, 16 Pet. (U. S.) 367). The use of those waters belongs to the people and may be rightfully claimed by them for purposes of navigation and commerce (*Barclay* v. *Howell*, 6 Pet. (U. S.) 498, 511). In the regulation of commerce it is the obligation and responsibility of the United States to preserve those waters to all our people for purposes of navigation and commerce upon the Great Lakes (*Sanitary District* v. *U. S.*, 266 U. S. 405; *Wisconsin* v. *Illinois*, supra). Ruling in 1913 on an application of the sanitary district for an increase in the amount of the water permitted to be diverted, the late Henry L. Stimson, then Secretary of War, held that he had no authority under the River and Harbor Act of 1899 to permit any diversion from Lake Michigan for the purpose of flushing sewage down the Illinois Waterway. In *Wisconsin* v. *Illinois*, supra, the Supreme Court held that the Federal Government was without power to authorize any diversion for uses outside the Great Lakes and that the power of the Federal Government was limited to the maintenance and preservation of the waters of the Great Lakes for purposes of navigation and commerce on those waters by the people of the Great Lakes States.

The abstraction of water proposed by these measures is not a regulation of commerce and navigation on the Great Lakes. The lowering of the water levels is designed to provide enjoyment of those waters to persons outside the Great Lakes and to give relief along the Great Lakes to owners of property not used directly in commerce or navigation. The increase in the flow from Lake Michigan into the Illinois Waterway would bear no relationship to the regulation of such commerce. The real fact is that all of these measures would interfere with and be harmful to Great Lakes commerce and navigation and deprive the people of the Great Lakes States of the use and enjoyment of those waters in their natural state. The Congress may not and should not set in motion any action which would impair the advantages in commerce and navigation in the use of the waters of the Great Lakes in their natural state.

The United States is obligated under the Boundary Waters Treaty of 1909 to preserve the waters of the Great Lakes for uses of commerce and navigation. By that treaty the United States and Canada agreed with each other that the waters should be so preserved and that there would be no greater diversions than those then authorized, except those necessary in the ordinary use of the waters by riparian owners, by either country unless the other agreed. In *Sanitary District* v. *U. S.*, supra, the Supreme Court held that the United States was under a duty by that treaty to prevent the State of Illinois from abstracting more water than was permitted by the treaty. If the Congress should enact any of these measures, it would violate a solemn treaty obligation and offend the people of Canada.

Mr. DONDERO. I think it is quite evident from this short statement of less than four pages as to the reason why you occupy such an eminent position in the Lake Carriers' Association.

Mr. JOHNSON. Thank you, Mr. Chairman.

I just want to make two observations: First, in this legislation the Congress is dealing with waters which, by the first treaty to which the United States was a party, and every treaty since then that has had anything to do with our neighbors to the north, have assured to the people of the United States and Canada that the waters of the Great Lakes shall forever be preserved for the purposes of navigation and commerce on the Great Lakes.

I concede immediately that the treaties recognize that there are such things or such rights as riparian owners ordinarily have—sanitation, and so forth. The proponents proceed here as though the Congress of the United States was asserting a property right; that the Congress had a right to take these waters and say, "We will put them here or there."

Mr. Thomson, the attorney general of Wisconsin, said that is not the law at all; the law is that the property rights of these waters belong to the people of the Lake States, and under the Constitution of the United States all that the Congress has the right to do is to act as

a trustee in the exercise and use of an easement for the purposes of navigation and commerce upon those waters.

Mr. DONDERO. Let me ask you this question: This matter found its way into the Supreme Court of the United States. It was adjudicated there; it is there now. Is it your position that this further question of diverting more water should go to the Court rather than go to the committees of Congress or the Congress itself?

Mr. JOHNSON. Mr. Chairman, you are just taking the words right out of my mouth. Next I was going to say if we are a government of law, if we believe in due process at all, then surely from the standpoint of everything that has been done the only place to adjudicate the question of whether or not the Sanitary District of Chicago is getting its fair share as a riparian owner is in the Supreme Court of the United States. You will just run roughshod over due process if the Congress enacts this legislation.

Mr. MACHROWICZ. Will the gentleman yield?

Mr. DONDERO. Yes.

Mr. MACHROWICZ. In connection with the matter raised by the chairman, I would like to read to you section 9 of the decision of the Court:

> That after the installation of controlling works as above provided, and on the completion of all the sewage-treatment works above this—

and I understand they have completed them entirely.

Mr. JOHNSON. I don't know.

Mr. MACHROWICZ. So we have been told—

> and in the absence of competent action by Congress in relation to navigation lawfully imposing a different requirement, the diversion of the sanitary district of water from Lake Michigan should not exceed an annual average of 1,500 cubic feet per second in addition to domestic pumpage.

Do you not understand that to mean that the jurisdiction still rests in Congress?

Mr. JOHNSON. Jurisdiction may rest in Congress for only one purpose. That is for the purpose of determining whether or not there is enough water in Chicago Harbor and Chicago River for navigation purposes. That is the only jurisdiction Congress has.

Congress has absolutely no jurisdiction or right if we are going to remain a Government of law, to take the water of the Great Lakes and shove it down the Mississippi River.

Mr. MACHROWICZ. It seems to me that that language is so clear that the jurisdiction lies right here in Congress——

Mr. JOHNSON. Mr. Congressman, you have lifted out of the decision of the Court just one part. You read that decision and what does it hold? It holds very clearly, as I said before, that Congress has the right and duty, of course, as a trustee of this easement for the purposes of navigation and commerce on the Great Lakes. That is all it is. But the Congress has no right to take waters that belong to Michigan, Wisconsin, Ohio, and so forth, and say it shall be shoved down the Mississippi River and used elsewhere.

Of course, if you think that there is not enough water in Chicago Harbor, or if you think that the water in the Chicago River as part of the Great Lakes watershed—and that is easily determined—is not enough, then you may reexamine and of course you can provide for the deepening of the channels or for more water.

Mr. MACHROWICZ. Let me then read another section:

After intensive and prolonged study based on the testimony of a number of eminent sanitary engineers, Special Master Hughes reached the conclusion that these matters were terminated and that provision should be made for further examination after the sewage-treatment plants have been completed and the effect of the effluent therefrom with the storm-water flow on the navigable channels has been observed, to the end that the question of any further or other relief may have appropriate consideration in the light of actual conditions.

That is a further quotation from the Supreme Court decision.

Mr. JOHNSON. Now you are talking about the other point. I said the question whether or not the State of Illinois as a riparian owner and the Sanitary District of Chicago as a riparian owner is getting a fair share of the water is a question that should be further adjudicated in the courts.

Mr. MACHROWICZ. It does not say so here.

Mr. JOHNSON. I know, but you lifted that out of the decision. What is the action the Congress may take? The only action the Congress may take is in the exercise of its right as trustee of the responsibility of this easement I am talking about on the Great Lakes, and not on the Mississippi or Illinois Waterway. There is the distinction. You cannot read that decision, nor can you read any decision of the Supreme Court of the United States that will say that the Congress of the United States has the right to take water from the people of the Great Lakes and give it to somebody else outside the Great Lakes watershed.

Mr. MCGREGOR. Will the gentleman qield for a question?

Mr. MACHROWICZ. Yes.

Mr. MCGREGOR. I note there what you said relative to transportation and treaties. Do you take the position that before Congress takes any definite action of major importance in the Great Lakes area which might impair transportation, that treaties should be entered into with Canada?

Mr. JOHNSON. I said I have two observations to make. The second observation I was going to make is just this, Mr. McGregor. If we respect our treaties at all, and I think we do, then before we do anything that is not done by way of further adjudication of the case pending an opinion before the Supreme Court we should go to Canada, because we have solemnly committed ourselves to Canada that the waters of the Great Lakes shall be preserved for the purposes of navigation for our citizens and their citizens. That is the important thing.

Mr. DONDERO. May I inquire at that point whether or not anything was done by way of treaty when we permitted Canada to change the course of two rivers which now flow into Lake Superior?

Mr. JOHNSON. My recollection is that that was tantamount to a treaty. I am not sure of that, Mr. Dondero.

Mr. DONDERO. Because that added to the volume of water going into the Great Lakes.

Mr. JOHNSON. I know that, but I think you will find there was an exchange of notes with respect to it. But Mr. Stanley can tell you that.

Mr. MACHROWICZ. I think the chairman of the Commission can tell you that.

Mr. DONDERO. Can you answer that question, Mr. Stanley?

Mr. STANLEY. This question of the diversion of water at Chicago?

Mr. DONDERO. No. The question is, Was there anything done by way of treaty between Canada and the United States when we permitted Canada to change the course of two rivers that formerly flowed into Hudson Bay, so that they now flow into Lake Superior?

Mr. STANLEY. Those treaties, or those arrangements, were made between—the Ogoki diversion you are talking about?

Mr. DONDERO. That is right.

Mr. STANLEY. They were made by the State Department and the corresponding department of Canada.

Mr. MACHROWICZ. By no treaty.

Mr. STANLEY. Our Commission had nothing to do with it.

Mr. MACHROWICZ. That is right. There was no treaty.

Mr. DONDERO. That is all I want to know.

Mr. MACHROWICZ. If we have no concern with that, why should Canada have any concern as to what we do with the Illinois River?

Mr. STANLEY. The Ogoki diversion and the diversion at Chicago are on an entirely different basis.

Mr. MACHROWICZ. They both affect the levels of the Great Lakes, don't they?

Mr. STANLEY. They both have to do with the Great Lakes, but the diversion at Chicago would probably have come before the Commission if it had been established. But at that time it was 10,000 cubic feet per second. Root was Secretary of State and did not want that question raised. It was a question that now would be under the cognizance of the Internal Joint Commission. So they simply left that out by sort of mutual consent. They didn't answer it one way or another but they gave Canada authority for the additional diversion at Niagara Falls.

Mr. DONDERO. I think you have answered the question, Mr. Stanley. I did not want to take up Mr. Johnson's time.

Mr. JOHNSON. I have finished, Mr. Dondero. I just wanted to say I saw Mr. Vallance of the State Department here and I just asked him what the explanation was. He said, as I have said, that that diversion of water which formerly had flowed into the Hudson Bay and was then diverted to the Great Lakes was agreed to by an exchange of notes, and it was part of the war effort of the two countries. That was it.

Mr. MCGREGOR. And there was no treaty involved?

Mr. JOHNSON. That is right. It was an exchange of notes.

Mr. STANLEY. Excuse me. The treaty provides, giving us control over the levels of the Great Lakes, that you cannot change the levels of boundary waters without the approval of the International Joint Commission. But this treaty also provides that the same thing may be done by agreement between the two countries.

Mr. JOHNSON. Yes. By special agreement.

Mr. STANLEY. It can be done either by agreement or if it falls without the cognizance of the Commission——

Mr. BECKER. Do I understand now that any tampering with the levels of the waters of the Great Lakes, irrespective of a specific treaty for that particular problem, is something that should be worked out between the two countries?

Mr. JOHNSON. Yes. We state in the 1909 treaty as clear as can be that from now on there will be no usage, obstruction, or diversion of these waters except as we agree among ourselves. And we go to our International Joint Commission—the two Governments go there if they have something they want authorized; or, as the chairman of our section said, the agreement may be accomplished by special arrangement between the two.

Mr. MACHROWICZ. Any diversion that would have a material effect?

Mr. JOHNSON. It does not make a bit of difference. It says from now on there shall be no further uses, obstructions, or diversions. It does not say material.

Mr. STANLEY. Excuse me. The question of serious effect is the question for the Commission to decide. But the Commission itself will not take cognizance of a variation that is not material. The treaty does not deal with that. The law is mandatory and article III of this treaty provides that no raising or lowering or diversion of any kind, or use of any kind, of this international waterway, shall be tolerated without the prior approval of the International Joint Commission.

Mr. DONDERO. Thank you very much.

Mr. JOHNSON. Mr. Chairman, thank you very much.

Mr. DONDERO. It is always a pleasure to have you appear before this committee.

Mr. JOHNSON. Thank you.

Mr. DONDERO. You have been here many times and we always know you bring an interesting message.

Mr. JOHNSON. Thank you. It is always a great pleasure for me to appear before this committee.

Mr. MCGREGOR. He is from Ohio, Mr. Chairman.

Mr. DONDERO. Then I will take it back.

Mr. MACHROWICZ. I think we should say despite that that he is welcome.

Mr. DONDERO. I notice that Congressman Hoffman is here at this time. We will be glad to hear from you, Congressman Hoffman, if you have a statement to make.

STATEMENT OF HON. CLARE E. HOFFMAN, MEMBER OF CONGRESS FROM THE FOURTH CONGRESSIONAL DISTRICT OF MICHIGAN

Mr. HOFFMAN. Mr. Chairman and members of the committee, I appreciate the opportunity to appear here.

For some fifty-odd years I have lived on the western side of Michigan and the eastern shore of Lake Michigan and am familiar with the conditions up and down the east side of Lake Michigan and with the shoreline all along it and the section of waters on the shoreline on the southern side of Lake Superior, from Duluth down, having owned property there for some 25 years and having noted the levee of both Lakes Superior and Michigan.

The chairman will recall a year ago we were at the Canadian Soo, where the International Joint Commission was meeting. It appeared from those hearings and also from investigations which I had conducted personally that the causes of the higher water were probably three then in number: first, the unusual rainfall and the runoff, which

I assume neither this committee nor any other human agency can change; second, the water which came down into the Lake Superior watershed and which had formerly gone toward the north into Hudson Bay was now being diverted; third, the opening of the 15 gates, I think it was, at the Soo, one after the other, just as rapidly as they could be opened.

The chairman will recall that at that time there was ample testimony, and I observed it personally, that when those gates were opened in that way the water came down into some of the buildings below and went to at least 3 feet and perhaps 4 feet in the business establishments below the water.

The Corps of Engineers at that time at the Soo had made available the charts showing the damage in Lake Huron and other lakes, running into the millions of dollars. I think everyone who visited the shores of Lake Michigan this year noted that the bank has continued to shift down to lake level. This is repeating what you already know; but when the question of diversion of the lake water through the canal at Chicago was up for consideration, the Corps of Engineers at that time, as I recall their statement, claimed the diversion of that water would lower the water of the lakes and would adversely affect the harbors. Later, as I understand it, the engineers said and are now of the opinion that the diversion of additional water which is suggested in the bill which I introduced through that canal would not in any way affect the level of the lakes. In fact, they were inconsistent in their positions.

The only suggestion I have to make is that if the Canadian Government will be a little of what I would consider more reasonable in diverting the water which naturally flows to the north, if they will use a little more discretion, I believe that this cycle will turn and soon we may be complaining of low water.

What puzzled me, however, was the fact that in the inland lakes in western Michigan where there is no connection with the Great Lakes, and in some lakes where there was no sizable stream running into the lakes, nevertheless, the water was up all the way for 6 to 10 inches in some lakes, in some to as much as 18 inches over the floors of cottages which had been built and were obviously above the high-water mark when built. That I can only attribute to the rainfall.

I thank you very much.

Mr. MACHROWICZ. Mr. Hoffman, do you favor the Jonas bill, which is the bill before us?

Mr. HOFFMAN. You mean to permit the water to go out?

Mr. MACHROWICZ. Yes.

Mr. HOFFMAN. It will certainly be helpful, but I think in any permission to be granted to increase the flow of water that there should be some safeguard, so that hereafter, when the cycle changes—and I know of it personally over a period of 53 years because I have seen it in the swamps of the Kalamazoo and the St. Joe Rivers on the western side of Michigan—there should be some safeguard to take care of that change. The rainfall goes up and down, and there is nothing we can do about that. I assume you will shortly have the need of doing something about the flow of water through the locks at the Soo, because when we were there the water was so high that they had to sandbag the entrance to the powerplant to prevent it going down and stopping the electric machinery which operated the locks.

Mr. MACHROWICZ. This bill merely provides for an increase of 1,000 cubic feet per second for a period of 3 years, and provides for a study by the Corps of Engineers, and a determination to be made after the period of 3 years, which would give the Corps of Engineers sufficient time to give a complete study of this problem.

Mr. HOFFMAN. Yes. Whether the amount is enough I do not know. I can only suggest that the Corps of Engineers consider both reports which it previously made, the first one of which said a larger flow through the canal would injuriously affect the harbors; and a later one which said it would have no effect. If they can coordinate and reconcile their two reports I think it will be helpful.

Mr. DONDERO. Thank you, Mr. Hoffman.

Mr. Herbert Naujoks, general counsel for the Great Lakes Harbors Association of Chicago, Ill.

May I make one inquiry of Mr. Johnson before Mr. Naujoks begins. There is one thing that escapes my memory. Do you know whether or not there is any application now pending before the International Joint Commission for the further diversion of water at Chicago, or any other place?

Mr. JOHNSON. I am not aware that there is. No, sir.

Mr. DONDERO. Mr. Naujoks.

STATEMENT OF HERBERT H. NAUJOKS, GENERAL COUNSEL, GREAT LAKES HARBORS ASSOCIATION

Mr. NAUJOKS. Mr. Chairman, I am general counsel of the Great Lakes Harbors Association.

Mr. DONDERO. Before you begin, may I state to the committee that Mr. Naujoks has been here on several occasions before this and on other matters. He has always been a welcome visitor and witness because he always has something to say of information and interest to the committee.

Mr. NAUJOKS. Thank you.

The Great Lakes Harbors Association is a not-for-profit organization representing municipalities bordering on the Great Lakes, except the city of Chicago.

I have appeared here also on previous occasions when diversion bills were up for consideration. At that time I also represented the States of Minnesota, Wisconsin, Michigan, Ohio, Pennsylvania, and New York, on occasion.

I have with me a statement which I would like to have filed and printed in the record. Also I would like to have permission to have printed in this record pages 180 to 197 of the hearings of May 27–28 and June 4 and 5 of 1952, relating to the same subject. Those pages include a statement on the Boundary Waters Treaty of 1909, on the alleged nuisance conditions in the Illinois Waterway, and a legal argument on the constitutional questions we believe are involved here, aside from the merits of these various bills.

Mr. DONDERO. That request was granted to witnesses yesterday and it will be granted to you. It will be made a part of the record, together with your statement.

Mr. NAUJOKS. Thank you.

(The prepared statement of Mr. Naujoks and the testimony referred to in the 1952 hearings are as follows:)

STATEMENT OF HERBERT H. NAUJOKS, GENERAL COUNSEL, GREAT LAKES HARBORS ASSOCIATION

My name is Herbert H. Naujoks, and I am the general counsel for the Great Lakes Harbors Association, a not-for-profit organization, composed of municipalities bordering on the Great Lakes, except Chicago. I wish to register the protest of the Great Lakes Harbors Association against approval of any of the bills under consideration which purport to authorize any increase in diversion of water from the Great Lakes-St. Lawrence watershed through the Chicago drainage canal over and above the amount fixed by the decree of the United States Supreme Court, dated April 21, 1930 (281 U. S. 696).

Repeated demands for increased diversion of water from the Great Lakes-St. Lawrence watershed through the Chicago drainage canal have been made ever since the United States Supreme Court in 1930 limited the Chicago diversion to 1,500 cubic second feet plus domestic pumpage (281 U. S. 696). These demands for increased diversion have from time to time been based on one or more of the following: (1) The alleged needs of local sanitation (sewage disposal); (2) the alleged danger to public health from contaminated waters; (3) the plea that additional electric power could be developed at the Chicago Sanitary District's hydroelectric plant at Lockport, Ill., and that thereby coal and boxcars would be saved during railroad strikes and during war emergencies; (4) that navigation requirements on the Illinois Waterway demanded increased diversion; (5) that damage to beaches and riparian property caused by high waters and winds would be lessened by additional diversion at Chicago, and (6) that additional water is needed to clean up the Illinois Waterway.

In order to understand rightly the present-day aspects of the perennial Great Lakes' diversion controversy, a summary review of the historical background of the problem which led to the abstraction of the waters from the Great Lakes-St. Lawrence watershed by the State of Illinois and the sanitary district of Chicago is necessary.

The Chicago water diversion controversy is closely connected with problems of sewage disposal and the protection of the water supply of Chicago

The so-called Chicago water diversion controversy arose out of the circumstance that between the years 1892 and 1900 the city of Chicago and its suburbs carried out a plan of disposing of the sewage of the Chicago metropolitan area by cutting a canal across the low Continental Divide which lies about 10 miles west of Lake Michigan and discharging the sewage of that area into the Mississippi watershed by way of the Des Plaines and Illinois Rivers.

Originally, this undertaking was designed primarily for the protection of the water supply of the city of Chicago and its suburbs by the adoption of what Illinois then considered to be an adequate method of the disposal of the sewage of that area. The problem confronting the city and State at that early day was the prevention of any recurrence of the many epidemics of typhoid, cholera, and other water-borne diseases which took a large toll in human lives in Chicago during the latter half of the nineteenth century.

The inception of the Chicago drainage canal dates back to early Chicago

The inception and development of the drainage canal plan of sewage disposal, however, dates back to early Chicago. It appears that Congress, by the act of March 30, 1822 (ch. 14, 3 Stat. 659), authorized the State of Illinois to survey and mark through the public lands of the United States a route of a canal connecting the Illinois River with Lake Michigan, and granted certain lands in the aid of such scheme. A further grant of land was made in the year 1827 and a canal known as the Illinois and Michigan Canal was finally completed in 1848. This canal crossed the Continental Divide between the Chicago and Des Plaines Rivers on a summit level 8 feet above the lake and then continued on to La Salle, Ill., where it entered the Illinois River. The summit of the canal was supplied with water by pumps located in the Chicago River. At first only a small amount of water, enough to supply the needs of navigation, was pumped into the canal, but before the year 1865 the Chicago River had become so offensive because of receiving the sewage of the rapidly growing city that for its immediate relief the authorities agreed to pump water from the Chicago River in excess of the needs of navigation.

The Illinois Waterway has always been badly polluted due to the untreated sewage from Chicago

By the year 1872 the summit level of the Illinois and Michigan Canal was lowered with the hope that this would result in a permanent flow of lake water through the South Branch of the Chicago River sufficient in amount to keep that stream unpolluted. However, this plan did not work, and the canal, the Chicago River, and that portion of Lake Michigan adjacent to the city of Chicago again became badly contaminated. Then, during the years 1880 to 1889 a continuance of this nuisance along the canal and river resulted in the arousing of public opinion in favor of better drainage and water supply.

Many investigations were undertaken and numerous reports filed. In 1887 the drainage and water supply commission, consisting of Rudolph Hering, Samuel G. Arlingstall, and Benezette Williams, who had studied three methods of sewage disposal, recommended as the most economical the discharge of the sewage into the Des Plaines River through a canal across the Continental Divide.

Thereafter the Illinois Legislature by act of May 29, 1889 (Ill. Laws 1889, p. 125), authorized the creation of sanitary districts to provide for drainage, with power to construct channels, improve navigable and other waterways, and for this purpose to condemn property. Pursuant to such authority the sanitary district of Chicago, a quasimunicipal corporation, was organized. In 1890, when this organization was completed, the sanitary district of Chicago embraced an area of 185 square miles. By later acts the district was enlarged so that it now embraces approximately 442 square miles, extending from the Illinois State line on the southeast to the northern boundary of Cook County on the north, with about 34 miles of frontage on Lake Michigan, including within its boundaries Chicago and its suburbs, a total of 60 cities, towns, and villages.

Since the opening of the drainage canal in 1900, the flow of the Chicago River has been reversed

The sanitary drainage canal was constructed by the sanitary district of Chicago between 1892 and January 17, 1900, when the canal was first opened. The canal extends from the West Fork of the South Branch of the Chicago River near Damen Avenue, a point about 8 miles from the mouth of the Chicago River at Lake Michigan, to the Des Plaines River beyond Lockport, a distance of 30 miles. Since the opening of the canal the flow of the Chicago River has been reversed, and it now flows away from Lake Michigan. While some pretense was made that this canal was for the purpose of creating in part a navigation route, the canal originally ended in a dam without locks, below which was a nonnavigable talirace. Later a lock was installed at Lockport to permit the passing of boats. There is a natural drop of 34 feet at Lockport. The purposes of the canal were the disposal of sewage and also to obtain a profitable waterpower. The Court found those were the purposes for the diversion (278 U. S. 367 at 415). Both purposes required as large a diversion as possible.

In 1896 Congress appropriated money for the dredging of the Chicago River and in that year the sanitary district asked for a permit from the Secretary of War to enlarge the cross section of the Chicago River, stating that this was necessary to make available the artificial channel under construction since 1892. The Secretary of War granted the permit but stated that this authority was not to be interpreted as an approval of the plans of the sanitary district to introduce a current into the Chicago River. This authority was to expire in 2 years. Other permits relating to the same subject were issued by the Secretary of War in 1897, 1898, and twice in 1899. After the canal was opened the Secretary of War granted a permit on December 5, 1901, allowing a diversion of 4,167 cubic feet per second.

Missouri sought to enjoin threatened pollution of the Mississippi and claimed danger to public health

Meanwhile, at about the time of the opening of the canal in 1900, the State of Missouri brought an action against the State of Illinois to enjoin threatened pollution of the waters of the Mississippi through the use of the sanitary drainage canal as a means of disposing of sewage of the city of Chicago. The Court denied, without prejudice, an injunction because it was not satisfied that the claims of Missouri as to the pollution of the waters of the Mississippi River at St. Louis and the claimed danger to public health were substantiated (200 U. S. 496).

The Illinois Legislature passed an act, approved May 14, 1903, which authorized the Sanitary District of Chicago to construct all such dams, waterwheels, and other works as may be necessary to develop and render available the power arising from the water passing through its main channel, and any auxiliary channels then in existence or thereafter to be constructed by the said district.

An application to do certain work in the Calumet-Sag Channel and to increase the flow from Lake Michigan through said channel was refused by the Secretary of War in March 1907 and as the sanitary district apparently decided to proceed with this work in spite of such refusal, the United States brought suit in 1908 to prevent its construction and prevent the increase of the flow. Another application by the district was refused by the Secretary of War in January 1913 and still later there was a further denial.

In 1908 the constitution of Illinois was amended, so as to authorize the legislature to provide for the construction of a deep waterway or canal, from the water powerplant of the Sanitary District of Chicago, at or near Lockport, to a point on the Illinois River at or near Utica, and for the installation and maintenance of powerplants, locks, bridges, dams, and appliances sufficient for the development and utilization of the waterpower of such waterway, it also being provided that all power so developed might be leased in part or in whole as the legislature might authorize, the rental to be subject to a revaluation every 10 years and the income to be paid into the State treasury.

The development of this project—the so-called Illinois Waterway—was undertaken and justified by Illinois upon the ground that the State of Illinois would make a profit of $3 million a year from the use of the water diverted from Lake Michigan for waterpower purposes. No diversion of any consequence was necessary to provide a connecting navigable waterway as distinguished from the requirements of sewage disposal, and the amount of water desired for waterpower, the profitableness of the waterpower being strictly proportional to the amount of water diverted. The diversion was made by the State of Illinois without the consent of any of the States bordering on the Great Lakes and in defiance of the Federal Government. Temporary permits were from time to time granted by reluctant Secretaries of War solely on the plea that since the Chicago Sanitary District and Illinois had neglected or refused to install modern sewage-disposal plants, enforcement of the law against impairment of the navigable capacity of the Great Lakes system—with the consequent termination or substantial reduction of the diversion—would impair or endanger the health of the people of the Chicago metropolitan area.

Meanwhile, despite the diversion of water from Lake Michigan, the Illinois Waterway was particularly offensive due to sewage pollution in the years 1911, 1912, 1913, 1919, and 1921. The 1925 report of the engineering board of review of the sanitary district points out that the waterway was covered with a black, slimy scum accompanied by very strong septic action and that there was a marked septic-sewage odor at all points as far south as Marseilles where it was the worst, being very noticeable in the business district of that town. The testimony before Special Master Hughes, in 1927, revealed that the odor from the river could be smelled for a distance of one-half a mile from the waterway and was noticeable as far down as Chillicothe, a distance overall of 110 miles from Lockport.

On October 6, 1913, the United States filed another bill to enjoin the sanitary district from diverting more than 4,167 cubic feet per second of water from Lake Michigan and the 2 suits were consolidated and heard as 1. In June 1920 Federal Judge Kenesaw Mountain Landis gave an oral opinion in favor of the United States. No decree was entered, however, and thereafter Judge Landis resigned his Federal seat and was promoted to the higher realm of baseball as commissioner. Judge Carpenter then heard further arguments and thereupon directed judgment for the relief demanded by the United States. From this decree an appeal was taken to the United States Supreme Court where the decree was affirmed in January 1925 (*Sanitary District of Chicago* v. *U. S.*, 266 U. S. 405). On March 3, 1925, the Secretary of War granted a permit for a diversion not to exceed 8,500 cubic feet per second upon certain conditions. This was a temporary permit, looking to a progressive reduction in the diversion as rapidly as possible, which permit was granted for humanitarian reasons only.

Wisconsin filed original suit in 1922

Meanwhile on July 14, 1922, the State of Wisconsin filed an original bill in the United States Supreme Court against the Sanitary District of Chicago and the State of Illinois, seeking an injunction against the diversion of waters of the Great Lakes through the sanitary drainage canal. In 1923, Attorney General

Herman L. Ekern, of Wisconsin—of the present firm of Ekern, Naujoks & Ekern, Chicago—and Attorney General Clifford L. Hilton, of Minnesota, together with Attorney General Andrew Dougherty, of Michigan, called a conference of the Great Lakes States to oppose in the courts the efforts of the Chicago Sanitary District and Illinois to continue at the expense of the other Great Lakes States the unjustified diversions of water from Lake Michigan.

On October 5, 1925, an amended bill was filed and the States of Wisconsin, Minnesota, Ohio, and Pennsylvania became cocomplainants. In 1926, the States of Michigan and New York each filed separate bills against the State of Illinois and the Sanitary District of Chicago, wherein they sought to enjoin the defendants from diverting any water from Lake Michigan.

The United States Supreme Court referred these causes to Hon. (later Chief Justice) Charles Evans Hughes as Special Master (271 U. S. 650) and after full hearings the Special Master filed his report on November 25, 1927. On January 14, 1929, the United States Supreme Court rendered its decision holding that the complainants were entitled to a decree which would be "effective in bringing that violation and the unwarranted part of the diversion to an end" (278 U. S. 367). However, by way of avoiding any unnecessary hazard to the health of the people of Chicago the Court decided to frame its decree so as to allow a reasonable and practicable time within which to provide some other means of disposing of the sewage of the sanitary district, reducing the diversion as the artificial disposition of the sewage increased from time to time, when a permanent, final, and effective injunction should issue (*Wisconsin et al.* v. *Illinois et al*, 278 U. S. 367).

The United States Supreme Court ruled that the Chicago Sanitary District and the State of Illinois must stop the illegal diversion at Chicago

The causes were then referred back to Hon. (later Chief Justice) Charles Evans Hughes who was directed to take testimony on the practical measures needed to dispose of the sewage without the unlawful diversions of water, and the time required for their completion and to report his conclusions for the formulation of a decree. On December 17, 1929, the report of the Special Master upon rereference was filed and on April 14, 1930, the decision of the United States Supreme Court on re-reference was rendered (281 U. S. 179), wherein the court again pointed out that "the defendants are doing a wrong to the complainants, and they must stop it. They must find a way out at their peril."

The decree of April 21, 1930, provided for progressive reductions in diversion until December 31, 1938, when the final reduction to 1,500 cubic feet per second became effective

On April 21, 1930, the decree of the court was entered (281 U. S. 696). This decree provided, in part, that (1) on and after July 1, 1930, the diversion of the waters of the Great Lakes-St. Lawrence system through the Chicago drainage canal should be reduced to an annual average of 6,500 cubic feet per second, in addition to domestic pumpage; (2) on and after December 31, 1935, this diversion should be reduced to 5,000 cubic feet per second, in addition to domestic pumpage; and (3) on and after December 31, 1938, this diversion should be reduced to 1,500 cubic feet per second, in addition to domestic pumpage.

In October 1932, the States of Wisconsin, Minnesota, Ohio, and Michigan applied for the appointment of a commissioner or other special officer to execute the decree of April 21, 1930 (281 U. S. 696), on behalf of and at the expense of the defendants. The petitioners complained of the delay in the construction of the works and facilities embraced in the program of the Sanitary District of Chicago for the disposition of sewage so as to obviate danger to the health of the inhabitants of the district on the reductions in diversion on December 31, 1935, and December 31, 1938, as the decree provided, in the diversion of water from Lake Michigan through the drainage canal.

In 1933, the decree of April 21, 1930, was enlarged

The Court appointed Edward F. McClennen as Special Master to make summary inquiry and to report thereon to the Court (287 U. S. 578). The Special Master proceeded accordingly and after full hearing submitted his report and recommendations. Upon that report the Supreme Court on May 22, 1933, rendered its opinion. (See 289 U. S. 395.) On the same day, the Court enlarged the decree to provide in part that the State of Illinois is required to take all necessary steps to cause and secure the completion of adequate sewage disposal plants and sewers to the end that the reductions in diversion may be made at the times fixed in the decree.

Thereafter the Committee on Rivers and Harbors, House of Representatives, adopted on June 15, 1934, a resolution on the question whether it is advisable for the United States to purchase the canals now owned by the Sanitary District of Chicago. This proposal was opposed by the States of Wisconsin, Ohio, Minnesota, and Michigan. The Sanitary District of Chicago demanded that the Federal Government purchase the canals and pay to it approximately $90 million for the canals. The United States district engineer at Chicago and the War Department reported unfavorably on this proposal and such purchase was not made.

In the 75th and 76th Congresses bills were introduced seeking authorization for increased diversion of water from Lake Michigan. These bills were never reported out of committee.

In its 1940 petition to the United States Supreme Court, the State of Illinois sought to obtain a temporary modification of the decree of 1930 to permit an increased diversion to December 31, 1942

On January 11, 1940, Illinois applied for modification of the decree of April 21, 1930, to permit a temporary increase in diversion to 5,000 cubic feet per second in addition to domestic pumpage to December 31, 1942. The petition alleged that subsequent to December 31, 1938, when the diversion of lake water was reduced to 1,500 cubic feet per second, because of the failure of the sanitary district to complete its sewage-disposal plants a putrescent, obnoxious, noisome, and unhealthy odor exists along the Illinois Waterway which causes nausea, insomnia, irritation of the mucous membrane of the nose and throat, and in general undermining of the health of persons living or working along the Illinois Waterway and that this condition aggravates illness and retards the recovery of patients ill in hospitals located along said Illinois Waterway. It was alleged that the people of Joliet and Lockport suffered particularly and that the condition of the Illinois Waterway, as a result of receiving untreated sewage, constituted a menace to the health of the people in those communities.

After hearings upon this application, the Court on April 3, 1940, rendered a per curiam opinion in which it said that Illinois "has failed to show that it has provided all possible means at its command for the completion of the sewage-treatment system as required by the decree and that no adequate excuse had been presented for the delay," and that Illinois had not submitted appropriate proof that the conditions complained of constitute an actual menace to the health of the inhabitants of the complainant communities or that the State is not able to provide suitable remedial or ameliorating measures without an increase of diversion of water from Lake Michigan in violation of the rights of the complainant States as adjudged by this Court. The Court said, however, that in order that it may be satisfied as to the actual conditions along the Illinois Waterway, a special master would be appointed to make a summary inquiry as to the actual conditions of the Illinois Waterway by reason of receiving untreated sewage and as to the actual effect, if any, of that condition upon the health of the inhabitants of the complaining communities and also with respect to the feasibility of remedial or ameliorating measures available to Illinois without an increase in diversion.

Special Master Lemann and the United State Supreme Court ruled against increased diversion

After protracted hearings, the special master, Monte M. Lemann, on March 31, 1941, filed his report with the Supreme Court in which he recommended that a decree be entered dismissing the petition of Illinois and taxing costs against the State of Illinois. The recommendation was based upon the master's conclusion "that the facts proven did not establish any menace to the health of the inhabitants of Joliet in Illinois or elsewhere along the waterway requiring increased diversion of water from Lake Michigan. The United States Supreme Court in May 1941 upheld the master's report and rejected the plea for increased diversion.

In October 1950 the Supreme Court denied the petition of Illinois for a clarification of the decree of April 21, 1930

During the year 1950 the State of Illinois, pursuant to paragraph 7 of the decree of April 21, 1930 (281 U. S. 696) petitioned the United States Supreme Court for an interpretation and clarification of said decree. The opposing Lake States moved to dismiss the petition on the ground that the decree was clear and unambiguous. The Court granted this motion and on October 23, 1950, dismissed the petition of Illinois.

History of the fight in Congress and before Federal officials for increased diversion at Chicago

Proponents of increased diversion have repeatedly stated that the fight for increased diversion will continue until success is attained. This diversion fight has been carried on not only in the courts, but in Congress and before various Federal officials and departments. Numerous bills have been introduced in Congress during the last 30 years but no diversion bill has ever been passed. Applications for increased diversion have been filed with two Presidents—Franklin D. Roosevelt and Harry S. Truman—with many Secretaries of War, and with various board and commissions, including the War Production Board and the Federal Power Commission. During World War II, Donald Nelson, chairman of the War Production Board, and Leland Olds, chairman of the Federal Power Commission, filed a report on this subject in which it was stated that "exercise of emergency war powers for this purpose (granting a temporary increase in diversion of waters from the Great Lakes through the Chicago Drainage Canal) would not appear appropriate." The report stated, further, that "such action would imply that the Supreme Court would not, on proper application, take all steps necessary to enable the city of Chicago adequately to safeguard public health."

Changes in Great Lakes' levels

The levels of the Great Lakes fluctuate through a wide range. The levels vary as much as 5.1 feet on an annual average basis; as much as 6.5 feet on a monthly average basis; some 2 to 3 feet or more on daily averages, and as much or more than 2 to 3 feet on an hourly average. For example, the level of Lake Michigan rose in February 1926 from a low of 577.3 feet above mean sea level about 5 feet to a high of 582.3 feet, in July 1929. Lake Michigan fell 3.29 feet in 20 months from July 1929 to February 1931. It rose 3.34 feet in 20 months from December 1949 to August 1951. As of May 1952 the level of Lake Michigan reached 582 feet.

In August 1952 the levels of Lake Michigan and Huron attained a high of 582.69 feet above above mean sea level. In June 1953 these levels had dropped to 581.98 feet above mean sea level. It is apparent that the levels of the Great Lakes will be from one-half to 1 foot lower this summer than they were in the summer of 1952, when they were at their highest for this century. These levels are now receiving into a normal or low cycle.

With each new drop in the levels, the Great Lakes bulk carriers must limit the amount of cargo carried, in accordance with the depth in the inbound and upbound channels between the upper and lower lakes, and to conform to the depth now available in the various harbors on the Great Lakes. The larger bulk carriers can carry up to 100 tons of cargo per inch of immersion. Therefore it is manifest that if additional diversion at Chicago is authorized, this would have the effect of reducing the carrying capacity of the Great Lakes fleet about 100 tons per ship per inch of loss of lake level for each trip made. The importance of the Great Lakes fleet to the economy of the country is borne out by the fact that the tonnage on the Great Lakes approximates our total waterborne foreign commerce. On a ton-mileage basis, it exceeds that on our inland waterways by 3.3 times, and that by our motortrucks by 1.6 times. Iron ore, limestone, coal, petroleum, and grain are the chief commodities moved on the lakes. Deeper channels are necessary to permit handling of larger ships now operating and in the blueprint stage, to reduce unit shipping costs, and thereby arrest spiraling costs for steel production and many other items. These larger ships are designed to handle some 24,000 tons of ore, equivalent to a freight train of 480 cars, with each car loaded to 50 tons.

In view of the foregoing, it is clear that there is no merit to any of the pending House bills which seek to authorize an increase in diversion over and above the amount fixed by the United States Supreme Court decree of April 21, 1930. On the other hand, it is clear that any additional diversion will be extremely harmful to the Great Lakes States and municipalities and their peoples, as well as to the municipalities and people located in the Illinois River Valley.

The Great Lakes Harbors Association wishes to go on record as being unalterably opposed to any increase in diversion for the following reasons:

First: Neither the Public Works Committee nor the Congress has the authority, under the United States Constitution, to pass these bills because the Congress has no jurisdiction in the premises, nor has Congress power to authorize the transfer of huge quantities of water from the Great Lakes-St. Lawrence Watershed

to the Mississippi watershed with substantial damage to the Great Lakes States, the municipalities located on the Great Lakes and their peoples. Any additional diversion of water from one watershed for the benefit of another is beyond the power of Congress and the Federal Government, particularly when made to create an artificial waterway or artificially to enrich a natural waterway (*Wisconsin* v. *Illinois*, 278 U. S. 367).

Second: The Supreme Court of the United States has expressly retained jurisdiction of this subject matter, and the proper forum is that Court. It has the machinery, and it has functioned many times, both on the application of the State of Illinois, and also on the application of the opposing Lake States to determine issues arising out of the Chicago diversion.

Third: The interests of Canada, a friendly foreign nation, with whom we have been at peace for more than 150 years, and which has a vital interest in maintaining the integrity of the lake levels, must be considered.

Fourth: It is the position of the International Joint Commission that if the pending bills have the effect of appreciably lowering the levels of the boundary waters, then it is notwithin the province of the Public Works Committee to attempt to change the amount of the present authorized diversion. Under the Boundary Waters Treaty of 1909 the two signatory nations—the United States and Canada—expressly divested themselves of all authority over the boundary waters as far as raising, lowering, or diverting them was concerned. At the hearings before the House Public Works Committee in June 1952 Hon. A. O. Stanley, Chairman of the International Joint Commission, seriously questioned the authority of the committee to take any action which would appreciably lower the levels of the Great Lakes. The Great Lakes Harbors Association concurs in this position taken by the International Joint Commission.

Fifth: Any additional diversion would effect a preference for the ports of Illinois over those of New York, Pennsylvania, Ohio, Michigan, Indiana, Wisconsin, and Minnesota and is, therefore, unconstitutional (*Wisconsin* v. *Illinois*, 278 U. S. 367).

Sixth: Any additional diversion would work injury to the States of New York, Pennsylvania, Ohio, Michigan, Indiana, Wisconsin, and Minnesota, depriving them and their citizens and property owners of property without due process of law and depriving such States of the natural advantages of their position, contrary to their sovereign rights as members of the Union (Id.).

Seventh: Additional diversion is not required to provide an adequate waterway from Chicago to the Mississippi River. The present diversion is ample and the increased depth can be obtained by dredging without requiring a change in the locks or dams. The present 9-foot channel can carry up to 100 million tons of cargo annually. Considering the annual tonnage transported on the waterway of roughly 17 million tons, an increase in diversion is unwarranted from a practical and economic standpoint and would be grossly inequitable to the Great Lakes States, their municipalities, people, and industries, and contrary to the power and authority of the Federal Government.

Eighth: Any improvement in navigable depths on a waterway from Lake Michigan to the Gulf of Mexico should not be made at the expense of the navigable depths of the Great Lakes.

Ninth: Additional diversion would be of no material assistance in cleaning up the Chicago Drainage Canal or the Illinois River. The only permanent and effective way of cleaning up these streams is by keeping out of them any untreated or partially treated sewage or other material which would pollute the water. Today, the lower Illinois River has reached such a stage of self-purification that the residents of that area are again able to enjoy fishing, bathing, boating, and other healthful water sports. If additional diversion is granted, it is certain that the Sanitary District of Chicago would be tempted to dump into the sanitary canal, and thence into the Illinois River, untreated or partially treated sewage which is now being deposited in sludge beds along the banks of the sanitary canal and the Chicago River, and which is causing strenous protests from the residents of those areas because of the obnoxious odors.

Tenth: The Great Lakes Harbors Association suggests that the real motive behind this demand for increased diversion is the desire on the part of the sanitary district to obtain additional hydroelectric power to be generated by the facilities it owns and operates at Lockport, Ill. While the sanitary district has repeatedly denied that it is interested in the development of additional power at Lockport, its denials cannot be given much weight because at every opportunity the sanitary district has pressed for increased diversion of lake

water in order to increase the power to be produced at Lockport. On May 8, 1946, a headline in the Chicago Daily News carried the statement that "By diverting more lake water, Lockport can double power." This article stated that Mr. Horace P. Ramey, assistant chief engineer for the sanitary district, asserted that increased diversion can double the power output at the Lockport plant of the sanitary district. In 1947 the suggestion was made by Mr. Anthony A. Olis, president, board of trustees of the Sanitary District of Chicago, that increased diversion of lake water was needed for development of atomic power because of the establishment of the Argonne Laboratory along the banks of the sanitary district canal, 20 or 25 miles southwest of Chicago. In 1950, an application for increased diversion was again made by the sanitary district in dispatches to then President Truman, to ex-Secretary of Defense Johnson, and to the Illinois Senators to obtain additional hydroelectric power during the coal strike. From the foregoing, it is plain that the sanitary district is interested in obtaining additional diversion for power purposes.

Eleventh: The United States Supreme Court in 1929 pointed out that the Great Lakes States and their peoples suffered irreparable and comprehensive damages due to the unlawful lowering of the levels of the Great Lakes by the Sanitary District of Chicago and the State of Illinois. It is plain that Great Lakes commerce will suffer increased costs if the levels of the Great Lakes are lowered through diversion at Chicago. As Secretary of War Stimson well pointed out in 1913 in denying an application by the Sanitary District of Chicago for a diversion of 10,000 cubic second-feet—"in a word, every drop of water taken out necessarily tends to nullify costly improvements made under direct authority of Congress throughout the Great Lakes and withdrawal of the amount now applied for would nullify such expenditures to the amount of many millions of dollars, as well as inflict an even greater loss on the navigation interests using such waters."

In the light of the present critical international situation, it is important that shipping on the Great Lakes be maintained at its highest level in order to carry the important iron ore from the Mesabi Range to the fabricating plants which, in turn, furnish the steel and iron needed to provide the weapons for maintaining this Nation strong and free.

CONCLUSION

In conclusion, the Great Lakes Harbors Association affirms its unalterable opposition to any increase in diversion from the Great Lakes—St. Lawrence watershed to the Mississippi watershed via the Chicago drainage canal. The pending diversion bills are but another in a long chain of attempts by Chicago interests to defeat or circumvent the United States Supreme Court decree of April 21, 1930 (281 U. S. 696).

Aside from the question of jurisdicition and power of Congress in the premises, no necessity or justifiable excuse exists for increasing the diversion of lake water at Chicago in excess of the amount fixed by the Supreme Court because: (1) Chicago today has no health problem related to diversion; (2) the Illinois Waterway has more than enough water to handle all the traffic available, and last year carried almost 17 million tons without delay or hindrance; (3) additional diversion would not alleviate or stop any erosion or damage to riparian property along the Great Lakes due to high waters and winds; (4) the Great Lakes have passed the peak of the recent high cycle and are now on the downward path and the lake levels can be expected to continue their downward trend for many years; (5) additional diversion will not clean up any objectionable conditions along the Illinois Waterway as long as the sanitary district continues the practice of dumping untreated or partially treated sewage into such waterway. The only positive and sure cure for any unsightly or unsanitary conditions in this waterway is to keep all polluted matter out of such waterway; (6) any additional diversion at Chicago will result in large and continuing damages to the Great Lakes States, their port cities, and their people; (7) inasmuch as the waters involved here are international in character, the only permanent and equitable solution to this problem is to have the 8 States bordering on the Great Lakes study the problem of water uses, regulation of the levels, etc., and enter into an agreement or compact on this subject as provided in the United States Constitution, subject to approval by Congress and Canada.

(The documents referred to are as follows:)

THE BOUNDARY WATERS TREATY OF JANUARY 11, 1909 (RATIFIED IN 1910), DOES NOT SANCTION NOR AUTHORIZE THE CHICAGO DIVERSION; SUCH DIVERSION IS CONTRARY TO THE BOUNDARY WATERS TREATY

It has been urged at the present hearings before this committee that the Boundary Waters Treaty of January 11, 1909 (which treaty was ratified in 1910), sanctions a diversion of 10,000 cubic second-feet of water from the Great Lakes-St. Lawrence system through the Chicago drainage canal and that this treaty furnishes justification for favorable consideration of the diversion bill which, if enacted into law, would authorize additional diversion at Chicago, in addition to domestic pumpage.

The contention that this treaty sanctions the existing Chicago diversion and justifies the passage of any type of diversion bill is wholly without merit. The Boundary Waters Treaty and its application to the Chicago diversion came to the attention of the United States Supreme Court in the suit filed by the Federal Government against the Sanitary District of Chicago wherein the United States sought to enjoin the diversion of the waters of Lake Michigan in excess of 4,167 cubic second-feet, authorized by the permit of the Secretary of War (*Sanitary District* v. *U. S.* (266 U. S. 405). The Court, in affirming the decree of the district court which granted an injunction, held that the Federal Government had a standing in the suit to carry out treaty obligations to a foreign power bordering on some of the Great Lakes. The Court in touching upon this subject said, in part (p. 426):

"With regard to the second ground, the treaty of January 11, 1909 (36 Stat. L. 2448), with Great Britain, expressly provides against uses 'affecting the natural level or flow of boundary waters' without authority of the United States or the Dominion of Canada within their respective jurisdictions and the approval of the International Joint Commission agreed upon therein."

A careful reading of this case discloses that the Supreme Court was clearly of the opinion that the Chicago diversion was contrary to the boundary waters treaty of 1909 because such diversion had not been approved in accordance with the terms of such treaty.

The construction placed by the Supreme Court upon this treaty is in accordance with the interpretation placed thereon by the United States War Department, the administrative body entrusted with the enforcement and application of laws relating to navigable waters of the United States, by the Legislative Assembly of the Province of Ontario, Canada, and by the Minister of the Interior of Canada.

Secretary of War Henry L. Stimson, in his opinion of 1913, denying the application of the Sanitary District of Chicago for a permit to divert 10,000 cubic second-feet of water at Chicago, stated that the boundary waters treaty of 1909 did not sanction the Chicago diversion, and that such question should, in accordance with the terms of the treaty, be placed before the international Joint Commission.

In a resolution adopted by the legislative Assembly of the Province of Ontario, Canada, in the year 1924 protesting against the Chicago diversion it was stated, in part, that "such diversion and abstraction is contrary to the international treaty respecting boundary waters entered into between Canada and the United States, and the Canadian Government has been protesting and is protesting against such diversion for some time past to the Government of the United States."

In 1926, Hon. Charles Stewart, then Minister of the Interior, in a statement made in House of Commons, declared that the Canadian Government had never recognized the Chicago diversion and promised that it would "continue to protest against the entire principle of abstracting water from the Great Lakes to another watershed."

This uniform interpretation of the boundary waters treaty by the several branches of the two governments concerned, is, we submit, conclusive as to its true meaning and intent, namely that the Chicago diversion is contrary to and amounts to a violation of this treaty. (*Sanitary District* v. *United States*, 266 U. S. 405.)

However, let us examine further into the treaty and the circumstances surrounding its signing and ratification.

The chief purpose of this treaty was stated to be the prevention of "disputes regarding the use of boundary waters." The treaty provided that the United States might authorize the diversion, within the State of New York, of the Niagara River above the falls for power purposes, not exceeding the aggregate

a daily diversion at the rate of 20,000 cubic feet per second, and that the United Kingdom, by the Dominion of Canada, or the Province of Ontario, might authorize a diversion of said waters, for power purposes, not exceeding a daily diversion at the rate of 36,000 cubic feet per second (Art. V).

With reference to the use of boundary waters, it was provided in the treaty that the following order of precedence should be observed among the various uses enumerated in the treaty for these waters, to wit: Uses for domestic and sanitary purposes; used for navigation, including the service of canals for the purposes of navigation; the uses for power and irrigation purposes. These provisions were not to "apply to or disturb any existing uses of boundary waters on either side of the boundary (art. VIII)."

When this treaty was under consideration, it was not intended to cover Lake Michigan as a boundary water. The true facts in regard to the circumstances surrounding and leading to the signing of this treaty with reference to the then existing diversion of waters at Chicago, and the reasons for the apportionment of the waters of the Niagara River, are as follows:

(1) In considering the amount of water of the Niagara River to be allotted to Canada and to the United States, the joint committee decided that it would not disturb any works which were then in process of construction and completion, and for which moneys had already been expended.

(2) It appeared that a large part of the hydroelectric power which was to be generated on the Canadian side was under contract for use in the United States and this fact was given recognition in the allotment of water to the two countries.

(3) Most of the water in question, and subject to allotment, was on the Canadian side, and not on the American side.

(4) The amount of diversion at Chicago authorized under the temporary permits of the Secretaries of War from the year 1905 to 1910 was 4,167 cubic second-feet and, in fact, the diversion through the Chicago Sanitary Canal for the period 1905 through 1909 averaged a little more than 5,000 cubic second-feet. The United States never authorized a diversion of 10,000 cubic second-feet and in 1908 the Government filed a suit to enjoin the diversion of more than 4,167 cubic second-feet from Lake Michigan. A second bill was filed in 1913 and the United States was ultimately successful. *Sanitary District* v. *United States*, 266 U. S. 405. This refutes the claim that a diversion of 10,000 cubic feet per second of water from Lake Michigan was sanctioned by Canada and the United States by the signing of the treaty in question.

WITH THE REDUCTION OF THE DIVERSION TO 1,500 CUBIC SECOND-FEET, PLUS DOMESTIC PUMPAGE, NO INTERFERENCE WITH OR OBSTRUCTION IN FACT TO NAVIGATION OR NAVIGABLE CAPACITY AND NO NUISANCE OR SANITARY PROBLEM EXISTS IN THE CHICAGO RIVER AS PART OF THE PORT OF CHICAGO, OR IN ANY PORTION OF THE ILLINOIS WATERWAY FROM LAKE MICHIGAN TO THE MISSISSIPPI RIVER

While I believe that Congress has authoritatively determined that, as a matter of law, there could be no obstruction to navigation or navigable capacity in the Chicago, Des Plaines, or Illinois Rivers from the discharge of liquid sewage or effluent, we proceed to answer the contention that upon the completion of the sewage-treatment program of the Chicago Sanitary District, and the flow at Lockport reduced to 1,500 cubic feet per second, plus domestic pumpage, there exists in the Chicago, Des Plaines, and Illinois Rivers no obstruction to navigation or to its navigable capacity.

I assume that the proponents of the diversion bills, in referring to the sanitary conditions after December 31, 1938, refer not merely to the preservation of adequate depths and widths, but to the prevention of any nuisance conditions arising from the disposal of the sewage which could create an interference with, or obstruction to, navigation or navigable capacity of the Chicago, Des Plaines, and Illinois Rivers, and we assume that in their view of the matter they did not mave in mind any fanciful standards, but intended simply to secure practical conditions which have been found adequate for navigation in line with the experience in navigable harbors generally.

While the State of Illinois and the sanitary district originally contended that the discharge of the entire volume of raw sewage into the Chicago River did not create any interference with navigation either in that river or downstream in the Illinois River ever since the United States Supreme Court held that diversion for sanitation is illegal and inadmissible, the State and the sanitary district have steadily attempted to create an impression that in order to maintain navigation at Chicago and along the Illinois River, it is necessary to elimi-

nate all possibility of contamination of the water in those rivers, no matter how negligible, so that in effect the water may be as pure as it was when there was no city of Chicago. If these contentions were correct, there would be no free and unobstructed navigation at any of the substantial ports of the United States, and navigation, instead of growing upon the Lakes and elsewhere, would have died out long ago, as the cities continued to grow. On the contrary, it has increased by leaps and bounds.

In *New York* v. *New Jersey* (256 U. S. 296), the Federal Government, with the consent of the Supreme Court, approved the discharge of the sewage into New York Harbor, with simple preliminary treatment for the removal of coarse material. This establishes the fallacy of contending for any such fanciful standards. If the method of discharge used in New York Harbor did not constitute an interference with navigation, clearly the discharge of a purified effluent cannot be held to do so.

I believe, however, that the testimony in the suits brought by the Lake States establishes conclusively that with the completion of the sewage-treatment plants and other practical measures deemed necessary for the treatment of the sewage, and with the flow at Lockport reduced at the end of 1938, conditions in the Chicago, DesPlaines, and Illinois Rivers will be more than adequate for maintenance of navigation. However, if the limited program of practical measures now being carried out by the sanitary district would not accomplish that result, or if an unusual standard of purity is to be required, then certain other practical measures can be added thereto.

At the hearings conducted before Hon. (now Chief Justice) Charles Evans Hughes, on rereference, much testimony was introduced on the subject of the discharge of liquid sewage or effluent into the Chicago River and the sanitary canal, and whether this would lead to nuisance conditions which would create interference with or obstruction to navigation or the navigable capacity of those waters. Four sanitary engineers, one Lake captain and a former colonel, with 45 years' experience in the Engineer Corps on river and harbor work in the United States, testified that with the completion of the sewage-treatment program by the end of 1938, and with no diversion or flow at Lockport, no nuisance would be created in the Chicago River, and there would be no interference with navigation. The sanitary engineers testified that conditions would be satisfactory, both from the standpoint of navigation and public health, and the waters would not be offensive to or injurious to the health of passengers or people employed on boats or docks. The testimony of these witnesses also showed that there will be no visible suspended particles in the Chicago River recognizable as of sewage origin; that the conditions would not produce an excessive growth of water plants, and that it would be greatly superior to the waters in any other harbors on the Great Lakes where there is no sewage treatment, and that the effluent or liquid sewage is stable, clear, odorless, and sparkling, and that it will remain stable indefinitely (*Wisconsin et al.* v. *Illinois et al.* Testimony of Howson, Gascoigne, Townsend, D., Elms, Townsend, Col., Inches. Joint Abstract on rereference, pp. 108–109, 639, 207–209, 214–218, 246–258, and 240–241).

Major Putnam, while United States district engineer at Chicago, said in his official report on the diversion of water from Lake Michigan in 1923 (*Wisconsin et al.* v. *Illinois et al.*, exhibit 1, Joint Abstract of Record, 179).

"As far as the navigation of the Chicago River and the drainage canal is concerned, if the flow of Lockport were entirely throttled and the powerhouse gates closed so as to permit no diversion from Lake Michigan, conditions would be decidedly improved. The current which now averages 1½ miles per hour and in some bridge draws is as high as 4, would be practically eliminated, making navigation considerably simpler, especially for the larger vessels whose passage through a narrow bridge draw is apt to increase the current materially." (pp. 59–60.)

This opinion was expressed by Major Putnam when there was no sewage treatment at Chicago. Major Putnam, appearing as a witness at the hearing before Hon. (now Chief Justice) Charles Evans Hughes, in March 1929, in *Wisconsin et al.* v. *Illinois et al.*, reaffirmed the correctness of that statement. (*Wisconsin et al.* v. *Illinois et al.*, J. A. on re-reference 99). Obviously with complete treatment, conditions will be further improved.

It is clear that if there is no nuisance from the standpoint of sanitation, there certainly can be none from the standpoint of navigation.

Present Sanitary Engineer Pearse of the Sanitary District of Chicago testified before a committee of Congress in 1924. In his testimony before the committee, which he reaffirmed in the Lake States suit, he stated that the effluent of a sprinkling filter or activated sludge plant is fit to run down a stream without

dilution. He reaffirmed that fish were living in the effluent of sanitary district trickling filters, right at the filters. (*Wisconsin et al* v. *Illinois et al.*, Master's Report 29, Joint Abstract on re-reference 520–1). He stated further:

"The biological processes, such as sprinkling filters, or activated sludge, when properly operated, produce a high grade effluent, *requiring no dilution, in which fish can live. The effluent, further, will create no nuisance, and can be turned into a water course even though dry, without fear of consequence.*" [Italics ours.]

Can it be reasonably contended that such an effluent would not be fit to use for the flotation of vessels, or that it would not be better than the waters in any one of the important harbors on the Great Lakes under present conditions? Moreover, the effluent will not be turned into a dry run (which Pearse says will create no nuisance) but will obviously be diluted with water by seiches, rains and natural run-offs, plus approximately 3,200 cubic second feet of water from Lake Michigan.

It should also be pointed out that from the earliest official reports of the Corps of Engineers, United States Army, right down to date, it has been consistently and repeatedly reported that a total flow of from 500 to 1,000 cubic feet per second from the Great Lakes watershed would be ample for all navigation requirements upon a waterway from Lake Michigan through the Des Plaines and Illinois Rivers to the Mississippi.

In a comprehensive report transmitted to Congress March 29, 1926, and being House Document 4, Sixty-ninth Congress, first session, the Board of Engineers, of which General Jadwin was senior member, advised Congress that an adequate waterway could be obtained with a total diversion or flow of 1,000 second-feet (*Wisconsin et al.* v. *Illinois et al.*, Ex. 18, Joint Abstract of Record, pp. 37, 38). This view was confirmed by General Taylor, then Chief of Engineers, both in transmitting the foregoing report and in his testimony before the Committee on Rivers and Harbors of the House of Representatives in 1926 (*Wisconsin et al.* v. *Illinois et al.*, Ex. 209, Joint Abstract of Record, pp. 35–36). The view was reaffirmed by both General Taylor, as Chief of Engineers, and General Jadwin, as senior member of the board, in Senate Document No. 130, Sixty-ninth Congress, first session, dated June 16, 1926 (*Wisconsin et al.* v. *Illinois et al.*, Ex. 249, Joint Abstract of Record, pp. 60–65). House Document 4, Sixty-ninth Congress, first session (Ex. 18), was again reviewed in House Document 12, Seventieth Congress, first session, dated May 11, 1928, and the various plans for a waterway, including one with a total flow of 1,000 second-feet, were again set forth in that report (Ex. 276, p. 18, Master's Report, p. 124). In discussing the Chicago drainage canal, the special Board (Master's 1927 Report, p. 124) stated:

"However, since this is a lake-level canal, no discharge is actually necessary for its use for navigation as distinct from sanitary uses, except for the lockages at Lockport."

This report was transmitted to Congress by General Jadwin, as Chief of Engineers, with his approval.

Thereafter the Corps of Engineers in official statements, as we have pointed out in another section of this brief, repeatedly affirmed that a commercially useful waterway could be constructed with a total diversion of 1,000 cubic feet per second or less, and in January 1938 the Secretary of War again advised in an official statement addressed to the Rivers and Harbors Committee that the amount of diversion fixed by the Supreme Court decree will, after December 31, 1938, be sufficient to provide a useful waterway from Lake Michigan to the Mississippi by way of the Des Plaines and Illinois Rivers.

While the lake-port cities contend that with completion of the program of available practical measures, as directed by the Supreme Court, and reduction of the diversion to 1,500 cubic feet per second, plus domestic pumpage, no nuisance conditions are created in the Chicago River, port of Chicago, or along the Des Plaines or Illinois River, they submit that without regard to the question of the existence of a nuisance the creation of a nuisance by Chicago cannot be made the basis of legalizing any diversion of water from the Great Lakes watershed. In the last analysis, such a basis results in a diversion, not for the benefit of navigation but for the purpose of relieving the nuisance from sewage pollution, or, in other words, for the purpose of assisting in the disposal of the sewage of the Sanitary District of Chicago, which this Court has held may not lawfully be done. In the words of Mr. Chief Justice Taft (278 U. S. 367), at page 418:

"Merely to aid the district in disposing of its sewage was not a justification, considering the limited scope of the Secretary's authority. He could not make mere local sanitation a basis for a continuing diversion."

Any contention that the discharge of local sewage and much less of the purified effluent of the sewage-treatment works at Chicago will create any obstruction to or interference with navigation in the Chicago River is not only untenable as a matter of logic but it is unsustainable as a matter of law. The material portion of title 33, U. S. C., section 407, reads:

"Deposit of refuse in navigable waters generally: It shall not be lawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited, either from or out of any ship, barge, or other floating craft, of any kind, or from the shore, wharf, manufacturing establishment, or mill of any kind, any refuse matter of any kind or description whatever, other than that flowing from streets and sewers and passing therefrom in a liquid state, into any navigable water of the United States, or into any tributary of any navigable water from which the same shall float or be washed into such navigable water."

Title 33, U. S. C., section 421, is a special act of similar import applying to Lake Michigan in front of Chicago, and prohibits the discharge of "any refuse matter of any kind or description whatever, other than that flowing from streets and sewers and passing therefrom in a liquid state into Lake Michigan within 8 miles of shore."

These statutes constitute both a general and a special determination by the Congress that the discharge of street wash and liquid sewage into any navigable water of the United States is legal and does not constitute an interference with or obstruction to navigation or navigable capacity as a matter of law. Since Congress has thus directly authorized the flow from streets and sewers which passes in liquid form to be discharged into navigable water, and has so declared that the same shall not constitute an obstruction to navigation or navigable capacity, it is clear that the same material, modified only by the treatment of the sewage element which takes out the solids and purifies the effluent, cannot constitute such an obstruction. In other words, the discharge of the street wash and purified sewage effluent of Chicago are, as a matter of positive statutory enactment, neither an interference with or obstruction to navigation or navigable capacity. This determination by the Congress is conclusive. (*Pennsylvania* v. *Wheeling Bridge Co.*, 59 U. S. (18 Howard) 421; *Southern Pacific Co.* v. *Olypian Dredging Company*, 260 U. S. 205.)

We are unable to find from reading the opinion of *New York* v. *New Jersey* (256 U. S. 296) that this statute was construed in that case. Certainly the special statute was not construed. The Federal Government was there seeking to protect Government property as well as the interests of navigation. The Government's contention was never decided on the merits. We do not know what would have been the decision of the Supreme Court in such an event. That the granting of a petition for intervention is not significant is shown by the action of the Court with reference to the claims of the Mississippi Valley States in the Supreme Court suits brought by the Great Lakes States.

The Law

I contend that Congress has no power, under the Constitution, to divert the waters of the Great Lakes into another watershed with substantial damage to the interests of the Lake States even in furtherance of a desire to create an artificial waterway or artificially to enrich a natural waterway in another watershed; but if Congress has such power, its exercise would be a gross injustice to a vast territory of the Nation and would be a violation of natural equities which have been built up at great expense in reliance upon those natural equities and constitutional rights by the Lake States and their citizens.

1. The constitutional power given to Congress over navigable waters of the United States does not extend to the abstraction of the waters of one watershed for the benefit of another.

The waters of the Great Lakes and their connecting waters, together with the submerged lands thereunder, are the property of the littoral States, and their title thereto, regardless of whether it be the full legal title, or in trust for their people, is subject only to the paramount right of Congress to regulate navigation as a power implied from the express power to regulate commerce. Since the rights of these States in such waters and submerged lands are proprietary rights, the control of these States thereover must be final and conclusive except insofar as that title is qualified by the legitimate scope of the Federal power to regulate navigation. (*Illinois Central Railroad Company* v. *Illinois*, 146 U. S. 387; *Shiveley* v. *Bowlby*, 152 U. S. 1; *Port of Seattle* v. *Oregon, etc.*, 255 U. S. 56.)

The power of the United States over navigable streams is implied from its power to regulate interstate commerce (*Gibbons* v. *Ogden*, 9 Wheat. 1). This

implied power over navigable water is limited to their preservation and improvement as avenues of interstate commerce. The right and duty of the United States in relation to navigable waters is a public trust for their preservation and improvement as interstate highways. The power thus granted to Congress by the commerce clause does not authorize Congress to destroy the things it is authorized to regulate in order to create something else which it prefers to regulate. This does not mean that navigable waters may not be connected by canals, which would only have the effect of making more serviceable the natural highways which they connect and which have been entrusted to the Federal Government for preservation and improvement; but it does not mean that in the guise of creating an artificial waterway, or in order to artificially enrich a natural waterway in another watershed, it may destroy the natural navigable waterways entrusted to its care, merely because Congress would prefer to regulate some other waterway. Except for such artificial connections which do not destroy or substantially impair the navigable capacity of the navigable waterways entrusted to its care, the power of Congress under the commerce clause can only extend to the preservation and improvement of natural water highways in substantially their natural location.

When the United States was settled, the colonists brought to this country the common law of England. That common law prevailed in full force and effect at the time of the adoption of the Constitution. The existence of that common law was taken for granted by the framers of the Constitution, and the Constitution was adopted and must be construed in relation to the rights, privileges, and limitations which existed by virtue of the common law, and upon which common-law rights the Constitution, upon its adoption, was superimposed. This has many times been recognized by the Supreme Court. In *Kansas* v. *Colorado* (206 U. S. 46, 94–95), the Court said:

"It is undoubtedly true that the early settlers brought to this country the common law of England, and that the common law throws light on the meaning and scope of the Constitution of the United States, and is also in many States expressly recognized as of controlling force in the absence of express statute. As said by Mr. Justice Gray in *United States* v. *Wong Kim Ark* (169 U. S. 649, 654):

" 'In this, as in other respects, it must be interpreted in the light of the common law, the principles and history of which were familiarly known to the framers of the Constitution. (*Minor* v. *Happersett*, 21 Wall. 162; *Ex parte Wilson*, 114 U. S. 417, 422; *Boyd* v. *United States*, 116 U. S. 616, 624, 625; *Smith* v. *Alabama*, 124 U. S. 465.) The language of the Constitution, as has been well said, could not be understood without reference to the common law (1 Kent Com. 336; Bradley, J., in *Moore* v. *United States*, 91 U. S. 270, 274).' "

When the Constitution was adopted, and the express power given to Congress to regulate commerce, the right to abstract the waters of a watershed had never been claimed and much less recognized. This fact is readily determined by any study of the common law in England as it existed at the time when the Constitution was adopted, or since that time (*Odgers, Common Law of England*, vol. 1, pp. 590–594). The power granted to Congress under the commerce clause was merely the power to appropriate all the waters of a navigable waterway for an avenue of commerce along such natural highway, including the natural extensions thereof, together with the right to improve that natural highway in its natural basin without regard to any incidental injury therefrom; but there was never included within the grant of power the right to destroy the natural navigable waters for the purpose of creating a waterway in another watershed, even as an incident of interstate commerce. The States which border on the Great Lakes were settled because of the existence of these resources, and the States themselves then enlarged and enhanced the gifts of nature within their boundaries. Citizens of these States settled and established themselves within their borders because the natural resources contained therein appealed to them.

It is not too much to say that the whole industrial and commercial structure of the United States has been built about the exisence of two great waterways separated by the Continental Divide, opening interstate and international communication by the St. Lawrence on the one hand and the Mississippi on the other. Each has its natural advantages. In the basin of each of these waterways, vast populations have built up their social and industrial institutions to use to the maximum these natural advantages. An intense but constitutionally restrained rivalry exists between the two sections and the dominant character of their respective civilization has been determined throughout the past 100 years, as much by their respective advantages as by their common advantages. That the natural

advantages of the Great Lakes region should now be sacrified to the drainage of Chicago or to the improvement in the navigable depths of the Mississippi would be at variance with the just expectations of the States and their peoples, who have settled the Great Lakes region and built it into an efficient industrial empire. To destroy these just expectations would be grossly inequitable and, as we have seen, there is no express language in the Constitution which requires the implication of any such power.

In *Hudson County Water Company* v. *McCarter* (209 U. S. 349, 356) this Court said:

"But we agree with the New Jersey courts, and think it quite beyond any rational view of riparian rights that an agreement, of no matter what private owners, could sanction the diversion of an important stream outside the boundaries of the State in which it flows. The private right to appropriate is subject not only to the rights of lower owners but to the initial limitation that it may not substantially diminish one of the great foundations of public welfare and health. We are of opinion, further, that the constitutional power of the State to insist that its natural advantages shall remain unimpaired by its citizens is not dependent upon any nice estimate of the extent of present use or speculation as to future needs. The legal conception of the necessary is apt to be confined to somewhat rudimentary wants and there are benefits from a great river that might escape a lawyer's view. But the State is not required to submit even to an aesthetic analysis. Any analysis may be inadequate. It finds itself in possession of what all admit to be a great public good, and what it has it may keep and give no one a reason for its will."

The question of diversion of water from one watershed to another was raised in *Wyoming* v. *Colorado* (259 U. S. 419). In its opinion the court held the point to be of no importance for the reason that both Wyoming and Colorado had adopted domestic policies with regard to diversion which disregarded the watershed. We know of no other case in which this question has been raised.

Conceding freely and fully the dominance of Congress in its regulation of navigable waters, we submit that the meaning of the donation of that power is that Congress shall have the right to regulate those waters where they are and not to carry them by artificial channels to some other place to be regulated, and that this limitation upon the power of Congress grows stronger with each interest built up around navigable waters, in their natural condition and location, until it becomes irresistible in such a case as that at bar, where the whole industrial and commercial fabric of the civilization of great States depends upon the unimpaired preservation of the natural advantages which caused men to seek locations and build their cities and the avenues of trade and commerce in relation to those natural advantages.

Was it ever contemplated by the framers of the Constitution that such natural resources might at any time be taken away from those who had settled in proximity to them and developed and made use of them for the benefit of people who had chosen to settle and locate in another watershed? We think not. This is a very different question from the right of the Federal Government to do incidental damage by improving a natural waterway substantially in its natural location. It is unthinkable that a power given to Congress only by implication was ever intended to permit a temporary majority of a political body to take or injure the gifts of nature in one State for another. It is our contention that Congress has no more power to take the water which is the property of the Great Lakes States to their injury, either to give it to Illinois for any purpose or to create an artificial waterway in another watershed, than it would have to authorize the State of Illinois to appropriate the forests of Wisconsin to construct canals or locks on the Illinois River for the improvement of navigation. For the purpose of making the principle involved very clear let us assume an extreme case. Assuming it were economically and mechanically possible to transport the waters of the Great Lakes system by siphon, pipeline, or other mechanism, to the Sacramento River, would it be contended that Congress had the power of appropriating the waters of the Great Lakes-St. Lawrence system for the improvement of navigation on the Sacramento River? Yet there is no distinction in principle between such a case and the appropriation of the waters of the Great Lakes for the Illinois and Des Plaines Rivers.

In asserting this lack of constitutional power on the part of Congress these Great Lakes States do not consider that they are challenging any of the great decisions of the Supreme Court with reference to the improvement of navigable waters by Congress. The facts here present a novel question which, in our opinion, has never been passed upon by the United States Supreme Court.

2. Cases sometimes cited as establishing the power of Congress to authorize the abstraction of waters from one watershed to another to the injury of the former do not sustain, but refute, such contentions as to the power of Congress.

We shall now review cases which have been cited as establishing the power of Congress to authorize the diversion and destruction of the navigable capacity of navigable waters of the United States. Plainly they do not sustain, but refute, such contentions as to the power of Congress.

Pennsylvania v. *Wheeling Bridge Co.* (59 U. S. (18 How.) 421) involved nothing more than the exercise of the familiar power of Congress under the commerce clause reasonably to balance the convenience of two forms of interstate commerce, that is, interstate commerce by railroad and highway over bridges across navigable streams, and interstate commerce by water upon such navigable streams. The case did not involve any power of Congress to destroy the navigable capacity of a navigable stream for any purpose and much less for a purpose unrelated to and not falling within the movement of interstate commerce. The fact that it was held in *Gibbons* v. *Ogden* (9 Wheat. 1) that regulation of navigable waters comes by implication within the Federal power under the interstate commerce clause did not make commerce by water necessarily predominant over every other form and avenue of interstate commerce, that is, it did not mean that interstate commerce by water was entitled to be free of every inconvenience which might be occasioned by the crossing of the navigable waters by interstate commerce by land, even though the resulting burden upon interstate commerce by land would far outweigh any inconvenience which would otherwise result to interstate commerce by water. Every time the Federal Government regulates the height of a bridge and the width of the spans over a navigable stream, it is merely exercising its power reasonably to balance the claims of two forms and methods of interstate commerce, that is, commerce by water and the important interstate commerce which may be moving by motor or train across the river by bridge. The question in each case is to what extent interstate commerce by water shall be burdened (not destroyed) for the benefit of interstate commerce by land and vice versa. The power to balance the sometimes conflicting claims of the two forms of interstate commerce does not touch the question of the alleged power to destroy the navigable capacity of a navigable stream by diverting it into another watershed even for another navigation route and much less for a purpose unrelated to interstate commerce.

The Wheeling bridge was a little too low to provide clearance for the stacks of the largest steamers at all stages of water without taking down a length of their stacks which was not uncommon in that day, when bridge clearances were less adequate than now (see First Wheeling Bridge case, *Pennsylvania* v. *Wheeling Bridge Co.*, 54 U. S. (13 How.) 518); and the Congress simply balanced this inconvenience against not only the economic loss but the complete disruption of interstate commerce by land, which would have been involved in a destruction of the bridge. Manifestly, the case lends no support to the claim advanced by the defendants.

South Carolina v. *Georgia*, 93 U. S. 4, in no sense involved a diversion from the watershed of a navigable stream or the destruction of its navigable capacity. It involved the not uncommon situation where a navigable stream separates for a short distance into two channels so that neither channel has the usefulness commensurate with the general navigable capacity of the river; and when an improvement is made, it is necessary to select one channel or the other, just as it is necessary to select some part of the single channel of the stream when it is sought to provide an improved channel. That the case does not support the defendants is plain from the statement of the court at page 11, reading as follows:

"* * * The action of the defendants is not, therefore, the destruction of the navigation of the river. True, it is obstructing the waterway of one of its channels, and compelling navigation to use the other channel; but it is a means employed to render navigation of the river more convenient—a mode of improvement not uncommon. The two channels are not two rivers, and closing one for the improvement of the other is in no just or legal sense destroying or impeding the navigation."

Missouri v. *Illinois* (200 U. S. 496) was a suit to enjoin the State of Illinois and the Sanitary District of Chicago from discharging sewage through an artificial channel into the Illinois River so that the effluent would eventually be carried down the Mississippi River past the city of St. Louis. No question of impairment of navigable capacity by reason of any diversion from the Great Lakes was raised or considered. Indeed, Missouri could not have raised such a question because the diversion, insofar as it affected Missouri waters at all, was beneficial to navi-

gation by increasing their navigable depths, as Missouri claimed in subsequent litigation when she sought to preserve the diversion. The only point made with reference to the diversion was that since the city of Chicago was not in the natural watershed of the Mississippi River there was no right to dispose of Chicago's sewage into that watershed and that contention did not depend upon whether the sewage was transported into the Mississippi watershed by water diverted from Lake Michigan or by other means such as pumping it undiluted over the divide. Manifestly, this presented no question of the power of Congress or of Illinois to divert water from the Great Lakes to the impairment of their navigable capacity. That the question merely involved the right to discharge the sewage into the Mississippi watershed is plain from the language of Mr. Justice Holmes, upon which defendants rely, as follows:

"Some stress was laid on the proposition that Chicago is not on the natural watershed of the Mississippi because of a rise of a few feet between the Desplaines and the Chicago Rivers. We perceive no reason for a distinction on this ground. The natural features relied upon are of the smallest. And if under any circumstances they could affect the case, it is enough to say that Illinois brought Chicago into the Mississippi watershed in pursuance not only of its own statutes but also of the acts of Congress of March 30, 1822 (c. 14, 3 Stat. 659, and Mar. 2, 1827, c. 51, 4 Stat. 234), the validity of which is not disputed (*Wisconsin* v. *Duluth*, 96 U. S. 379). Of course, these acts do not grant the right to discharge sewage, but the case stands no differently in point of law from a suit because of the discharge from Peoria into the Illinois, or from any other or all other cities on the banks of the stream."

It is also illuminating to note the following comment by Mr. Justice Holmes in the subsequent case of *Sanitary District* v. *United States* (266 U. S. 405), to wit:

"The defendant in the first place refers to two acts of Congress: One of March 30, 1822 * * * and another of March 2, 1827 * * * referred to, whether hastily or not in *Missouri* v. *Illinois* (200 U. S. 496, 526), as an act in pursuance of which Illinois brought Chicago into the Mississippi watershed" (loc. cit. 427).

Of course, it is a complete answer to the contention based upon *Missouri* v. *Illinois* (200 U. S. 460) that these identical statutes and that very decision were urged to constitute authority for the diversion in *Wisconsin* v. *Illinois* (278 U. S. 367), and that a unanimous Court, which included Mr. Justice Holmes, held that they were no authority whatsoever.

The claim has also been made that *Sanitary District* v. *United States* (266 U. S. 405) holds that Congress has power to authorize the diversion of water from one watershed to the other notwithstanding the impairment of navigable capacity. Of course, that case presented the exact antithesis of whether Congress could auhorize a diversion from a navigable stream to the impairment of its navigable capacity. The only question there was whether, as against a State, Congress could prohibit a diversion from a navigable stream which would impair its navigable capacity. The relief sought was in strict conformity with the trust of Congress to preserve and improve the natural navigable waters entrusted to its care, and the Court held that it had that power. The injunction in that case was granted "without prejudice to any permit that may be issued by the Secretary of War according to law" (loc. cit. 432). The defendants in *Wisconsin* v. *Illinois*, *supra*, contended that that was a recognition both of the power of Congress and of the administrative officers to authorize such diversion. But the contention was in vain.

In *Wisconsin* v. *Illinois* (278 U. S. 367) it was vigorously urged upon the Court, on the one hand, that Congress was without power to authorize a diversion from the Great Lakes watershed in an amount which would substantially impair the navigable capacity of the Great Lakes system, and on the other hand, that Congress possessed and had exercised such power; but the Court found it unnecessary and declined to decide that grave constitutional question. Mr. Chief Justice Taft, speaking for a unanimous Court, stated the contentions of the parties and the view that they need not all be decided, in the following language at page 410:

"* * * Defendants assert that such a diversion is the result of congressional action in the regulation of interstate commerce, that the injury, if any, resulting in damnum absque injuria to the complaining States. Those States reply that the regulation of interstate commerce under the Constitution does not authorize the transfer by Congress of any of the navigable capacity of the Great Lakes system of waters to the Mississippi Basin, that is, from one great watershed to another; second, that the transfer is contrary to the provisions of the Constitution forbidding the preference of the ports of one State over those

of another; and third, that the injuries to the complainant States deprive them and their citizens and property owners of property without due process of law and of the natural advantages of their position, contrary to their sovereign rights as members of the Union. If one of these issues is decided in favor of the complaining States, it ends the case in their favor and the diversion must be enjoined. But in the view which we take respecting what actually has been done by Congress some of these objections need not be considered or passed upon.

"The complainants, even apart from their constitutional objections, contend that Congress has not by statute or otherwise authorized the Lake Michigan diversion, that it is, therefore, illegal and that the injuries by it to the complainant States and their people should be forbidden by decree of this Court."

In disposing of the case, Mr. Chief Justice Taft said at page 417:

"The normal power of the Secretary of War under section 10 of the act of March 3, 1899, is to maintain the navigable capacity of Lake Michigan and not to restrict it or destroy it by diversions."

And again at page 418:

"* * * Merely to aid the district in disposing of its sewage was not a justification, considering the limited scope of the Secretary's authority. He could not make mere local sanitation a basis for a continuing diversion."

* * * * * * *

"* * * It may be that some flow from the lake is necessary to keep up navigation in the Chicago River, which really is part of the port of Chicago, but that amount is negligible as compared with 8,500 second-feet now being diverted. Hence, beyond that negligible quantity, the validity of the Secretary's permit derives its support entirely from a situation produced by the sanitary district in violation of complainants' rights; and but for that support complainants might properly press for an immediate shutting down by injunction of the diversion, save any small part needed to maintain navigation in the river."

And further at page 420:

"* * * And insofar as the prior diversion was not for the purposes of maintaining navigation in the Chicago River, it was without any legal basis, because made for an inadmissible purpose. It therefore is the duty of this Court by an appropriate decree to compel the reduction of the diversion to a point where it rests on a legal basis and thus restore the navigable capacity of Lake Michigan to its proper level."

To appreciate the scope of this decision it is necessary to keep in mind that the defendants, the State of Illinois and the Sanitary District of Chicago, and intervening Mississippi Valley States insisted that the diversion was essential to the maintenance and development of the Lakes-to-Gulf waterway, that the Panama Canal had seriously injured the industrial welfare and development of the entire Mississippi Valley, that the maintenance and improvement of the Lakes-to-Gulf waterway was essential to prevent ruinous injury to the Mississippi Valley, that the navigable depths in the Illinois waterway being constructed by the State of Illinois from the end of the drainage canal through the Des Plaines River to the Illinois River depended upon the maintenance of the diversion, that from 1.2 to 5 feet of the navigable depths in the Illinois River, a Federal navigation project, was supplied by the diversion, that the diversion enriched navigable depths in the Mississippi River as far as St. Louis, somewhere between 1 and 2 feet, and that the Inland Waterways Corporation claimed the diversion was essential to its practical operations on the Mississippi River and that the special master found it was not controverted that the Secretary of War had these considerations before him on the application and hearing which resulted in the issuance of the permit under which the defendants sought to justify the diversion. The reference to the possible necessity for a negligible diversion to preserve navigation in the Chicago River should not be confused with any diversion to create an artificial waterway or to enrich the navigable capacity of another watershed. The Chicago River is part of the port of Chicago on the Great Lakes (loc. cit. 418) and as such possible negligible diversion was solely for the purpose of preserving the navigable capacity of the port of Chicago as part of the Great Lakes system and was limited to an amount which would not impair the navigable capacity of the Great Lakes system (loc. cit. 418, 420). See also *Wisconsin et al.* v. *Illinois et al.* (281 U. S. 179, 199).

Wisconsin v. *Illinois* again came before the Supreme Court in Two Hundred and Eighty-first United States Reports, page 179. The defendants again urged that the diversion had been authorized by the Congress; and the Court, speaking through Mr. Justice Holmes, said at page 197:

"* * * These requirements as between the parties are the constitution rights of those States, subject to whatever modification they thereafter may be subjected to by Congress acting within its authority. It will be time enough to consider the scope of that authority when it is exercised."

Here again the Court refused to decide whether such power rested in the Congress.

Wisconsin v. *Illinois* came before the Supreme Court a third time in Two Hundred and Eighty-ninth United States Reports, page 395. The defendants and also the Mississippi Valley States (which had attempted again to intervene) contended that the Rivers and Harbors Act of July 3, 1930, and the pending Great Lakes-St. Lawrence Waterway Treaty with Canada constituted an assumption of control over the diversion by the Congress and required a modification of the decree. The Court, in pointing out that similar contentions had been urged by the defendants throughout the litigation, said in part:

"In this suit, the State of Illinois has defended from the beginning upon the ground that diversion was essential with reference not only to the needs of sanitation but also for a continuous waterway from the lake to the Gulf. *Wisconsin* v. *Illinois*, supra, pages 388, 296. But the Court found this contention unavailing and that the existing diversion was unlawful" (loc. cit. 401).

Again the Court held that the Congress had not attempted to modify the diversion as fixed by the terms of the Supreme Court degree, and found it unnecessary to pass upon the power of Congress so to do.

Arizona v. *California* (283 U. S. 423) did not involve any question of a diversion which would destroy the navigable capacity of a navigable stream. Under the Western Law of Waters, the right to divert water for irrigation and municipal purposes to another watershed has prevailed ever since the Spanish days. That right is, of course, subject to the limitation that such diversion may not be made to an extent which substantially impairs the navigable capacity of navigable waters. *United States* v. *Rio Grande Dam & Irrigation Co.* (174 U. S. 690). The contentions of Arizona were, first, that the Colorado River was not navigable at all and that hence the Federal Government had no power to engage in the project; and, second, that the terms of the act would prevent Arizona from securing its fair share of the waters of the river for irrigation and municipal purposes. On the facts alleged in the bill and the facts of which the Court took judicial notice, it appeared that the Colorado River was a navigable water of the United States, that the project would improve its navigable capacity, that the storage waters would largely consist of flood waters otherwise going to waste and would provide a large surplus above that available under natural conditions for irrigation and municipal uses and that nothing in the act and nothing which had been done under the act prevented Arizona from exercising its full rights of appropriation and that unless and until there should be an interference or threatened interference with Arizona's rights of appropriation for irrigation and other purposes, there was no cause of action and the bill was dismissed without prejudice.

3. The Congress of the United States is without power to abstract and lower the waters of the Great Lakes-St. Lawrence system within the boundaries of the Great Lakes States; and any such action by Congress would constitute the taking and destruction of the property and riparian rights of the Great Lakes States and their peoples without due process of law and without just compensation in violation of the fifth amendment to the United States Constitution.

The fifth amendment to the Federal Constitution provides in part that "no person shall * * * be deprived of life, liberty, or property without due process of law; nor shall private property be taken for public use without just compensation."

Article I, section 8, clause 3 of the Federal Constitution provides: "The Congress shall have power * * * to regulate commerce with foreign nations, and among the several States, and with the Indian tribes * * *."

The language above quoted in article I, section 8, must, of course, be interpreted in the light of the great dogma of constitutional interpretation, that—

"If the end be legitimate and within the scope of the Constitution, all the means which are appropriate, which are plainly adapted to that end and which are not prohibited, may constitutionally be employed to carry it into effect" (*McCulloch* v. *Maryland*, 4 Wheat. 316).

To this must be added the observation that the extent of the power given to Congress must be determined not only by the immediate language of the grant under consideration but by the limitations, if any, found elsewhere in the Constitution. The great constitutional guaranties were ordained to restrain, sometimes State action and sometimes Federal action, in the preservation of the rights which the people were not yet ready to surrender.

As we have seen, the Great Lakes States have sovereign and proprietary rights as upon a public trust in the navigable waters and the lands thereunder (*Martin* v. *Waddell*, 16 Peters 367; *Barney* v. *Keokuk*, 94 U. S. 324).

The nature and extent of this ownership and the duty imposed upon the State has been frequently examined and declared.

In *Hudson County Water Company* v. *McCarter* (209 U. S. 349), it was held on the authority of *Kansas* v. *Colorado* (185 U. S. 125), and *Georgia* v. *Tennessee Copper Company* (206 U. S. 230) that the States, as quasi sovereign and representative of the interests of the public, had a standing in court to protect the atmosphere and the water and the forests within its territory, irrespective of the ascent or dissent of the private owners immediately concerned and that a State has a constitutional power to insist that its natural advantages remain unimpaired and is not dependent upon any reason for its will so to do. In the exercise of this power the State may prohibit diversion of the waters of its important streams to points outside its boundaries.

In *North Dakota* v. *Minnesota* (263 U. S. 361), it is held that the ownership and duty of the State are such that where a sister State, by changing its method of drainage, increases the flow of an interstate stream so that water is thrown upon the farm of another State, the latter State has such an interest as quasi-sovereign, in the comfort, health, and prosperity of her farm owners that relief by injunction may be had upon application to the United States Supreme Court against the State causing the injury. In this holding the Court adopts the doctrine established in the State courts that one owning land on a watercourse has rights of use limited by the equal rights of his neighbors, and applies this principle of private law to the conflicting public rights of independent States. The effect of this holding is that in addition to its sovereign right within its own borders, the State, as trustee, is the repository and defender of the private rights of its citizens and is under obligation to represent and vindicate those rights when they are invaded by the action of a State which is beyond the reach of individual applications for redress. *Pennsylvania* v. *Wheeling Bridge Co.* (13 Howard 518); *Pennsylvania* v. *West Virginia* (262 U. S. 553); *Georgia* v. *Tennessee Cooper Co.* (206 U. S. 231).

From these cases and the great body of decided law of which they are merely an illustrative part, it is clear that the States have the combined capacity of political sovereignty and proprietorship, and that in both of these capacities they have the rights and duties of independent nations, in the protection of their own political interests and the public and private interests of the citizens, which belong to independent nations except to the extent that they have limited this right by their concessions in the Constitution.

This subject is fully discussed and decided as to its general principles in *Georgia* v. *Tennessee Copper Co.* (206 U. S. 231), where it is said:

"When the States by their union made the forcible abatment of outside nuisances impossible to each, they did not thereby agree to submit to whatever might be done. They did not renounce the possibility of making reasonable demands on the ground of their still remaining quasi-sovereign interests; and the alternative to force is a suit in this court.

"* * * If the State has a case at all, it is somewhat more certainly entitled to specific relief than a private party might be. It is not lightly to be required to give up quasi-sovereign rights for pay; and, apart from the difficulty of valuing such rights in money, if that be its choice it may insist that an infraction of them shall be stopped. The States by entering the Union did not sink to the position of private owners subject to one system of private laws. This court has not quite the same freedom to balance the harm that will be done by an injunction against that of which the plaintiff complains, that it would have in deciding between two subjects of a single political power. Without excluding the considerations that equity always takes into account, we cannot give the weight that was given them in argument to a comparison between the damage threatened to the plaintiff and the calamity of a possible stop to the defendants' business * * *."

A specially interpretative consideration, affecting States carved out of the Northwest Territory, arises from the provisions of article 4 of the Ordinance of 1787. This ordinance was promulgated by the Congress of the Confederation prior to the taking effect of the Constitution of 1789. The ordinance was passed on the 13th day of July 1787; the Constitution was signed by the members of the Convention on the 17th day of September in the same year. But the ordinance itself declared "the navigable waters leading into the Mississippi and the St. Lawrence and the carrying places between them shall be common highways and forever free." This clause has been held to impose upon the States constituted

out of the Northwest Territory a limitation upon their sovereignty and proprietorship of navigable waters within their limits. By it they are made guardians of these navigable waters and may not injure or destroy their navigability. *In re Crawford County L. & D. District* (182 Wis. 404); *Economy Light & Power Co.* v. *United States* (256 U. S. 113). The purpose of this ordinance and of the Constitution, prepared at the same time and in the same atmosphere of public intention and purpose, was to declare for all times the preservation inviolate of the natural waterways of the country. The intensity of this purpose can only be appreciated if we recall that these great enactments were made half a century before the building of the first railroad, by men who knew no other great arteries of trade and commerce by navigable waters, and who lived in a civilization which was extending itself westward from the seacoast by following and building cities upon the banks of navigable streams. With such thoughts in mind, it is not possible to think that the fathers on the one hand restrained the sovereign and practically independent colonies from sacrificing navigable waters within their boundaries, and on the other donated to a general Government about to be created, the power to destroy those navigable waters.

The fifth amendment is clearly a limitation upon the power of Congress under section 8 of article I of the Constitution.

In *Monongahela Navigation Co.* v. *United States* (148 U. S. 312), it is said:

"But like the other powers granted to Congress by the Constitution, the power to regulate commerce is subject to all the limitations imposed by such instrument, and among them is that of the fifth amendment, we have heretofore quoted. Congress has supreme control over the regulation of commerce, but if, in exercising that supreme control, it deems it necessary to take private property, then it must proceed subject to the limitations imposed by this fifth amendment and can take only on payment of just compensation. The power to regulate commerce is not given in any broader terms than that to establish post offices and post roads; but, if Congress wishes to take private property upon which to build a post office, it must either agree upon the price with the owner, or in condemnation pay just compensation therefor." (P. 336.)

The validity of this principle has never been doubted, but a great variety of cases have arisen presenting the question as to whether or not a particular act of the Federal Government in furtherance of navigation did in fact constitute a taking of private property or merely caused incidental damages to property so related to the navigable stream in question as to be under a servitude to bear without compensation damages incident to the improvement of the stream. In some of the cases the distinction seems to be as between an actual taking of the physical property and a damage to the property, but this distinction does not appear to be entirely satisfactory. Property may be so damaged as to be useless. To deny the owner compensation merely permitting him to have the barren satisfaction of retaining the legal title and perhaps having physical possession of property he could no longer use, would be to victimize him by forms of law rather than to render justice according to the merits of his cause. The true distinction would rather seem to be that riparian property has, implicit in its location, such a relation to the stream that it must bear the normal consequences of those improvements in the stream which are made in order to render the stream more serviceable for the great purposes of national commerce. This servitude derives from the location of the land and is natural and obvious. If the stream be deepened with a consequent increasing erosion of its banks, the damage is natural. If the Government selects one or the other of two possible channels for improvement and thus incidentally neglects or even injures property upon the other channel, it is again clear that this is a mere incident of the servitude. That which nature has intended man has perfected with regard to the channel improved and that possibility was inherent in the fact that the stream was a navigable stream. If on the other hand for the purpose of improving a stream it be widened, thus doing more than nature intended, and for this purpose land must be actually taken, compensation must be paid because the Government in the public interest, has gone beyond nature's intended process and has so exceeded the servitude of the riparian owner. Similarly, if land not adjacent to a navigable stream be taken or damaged as by excavating stone from it to improve a navigable stream nearby or remote, the taking or injury must be compensated because the land thus damaged is under no servitude to contribute to the improvement. Similarly, if the land bordering upon a navigable stream be injured by an impairment of the navigability of the stream, which does not arise from an effort to improve the stream and does not in fact improve the stream but is for another purpose, as for instance to provide sanitary appliances

for a city or to create an artificial waterway, the damage constitutes a taking because there is no servitude in the riparian proprietors along navigable waters to endure a damage to their property for the benefit of the sanitation of a remote city or for the creation of an artificial waterway, however useful, at a place where nature has not intended one to be. This does not mean that the artificial waterway may not be useful, but it means that the creation of it is beyond the servitude of the riparian proprietors of the stream which is sacrificed for its creation.

A full discussion of this subject is found in the important case of *Fulton Light, Heat & Power Co.* v. *State* (200 N. Y. 400). This case grew out of the construction of the New York State Barge Canal. In the course of the construction it became necessary to parallel the Oswego River with an artificial canal and the question arose as to whether the diversion of the waters of the Oswego River into the artificial canal constituted such an improvement of the river as a waterway as to impose damages caused to riparian owners as a mere incident for which compensation was not necessary to be paid. The Court of Appeals of New York held, "While the State may make improvements in navigable rivers for the purpose of aiding navigation without regard to the ownership of the bed, the interest of the riparian owner therein being subordinate to the public easement of which the State is trustee, the State cannot divert the waters of a river to the injury of a riparian owner by constructing a canal wholly outside of the channel of the river without paying compensation for such injuries."

In the body of the opinion it is said:

"But when, under the plea of the improvement of navigation, the property of the riparian owner is taken or diminished by the diversion of the waters, for a public work not within, but wholly outside, the channel of the river, I think there is a clear case for the enforcement of the constitutional guaranty of compensation. If the appropriation is for a purpose not incidental to the natural, or public, servitude in the river, how could that provision of the fundamental law of this Government—so instinct with the principle of justice—find juster application? The State, by the exercise of its power of eminent domain, could take these claimants' lands and divert from their power plant properties the water power, which operated them, upon making just compensation therefor; but in my opinion, it had no unlimited right to make a use of the river for a public purpose, except as such purpose was related to the improvement of the channel, or bed, of the river itself for purposes of navigation or transportation."

To the point that the servitude of riparian property for the benefit of navigation does not extend to the invasion of riparian rights by the sovereign or otherwise, for the creation of an artificial waterway for power purposes, for drainage purposes, for irrigation purposes, for municipal water supply, or for any purpose other than improving the navigable waters to which the riparian property is littoral, we cite without discussion the following cases:

Ex parte Jennings (6 Cow. 518, 16 Am. Dec. 447); *Canal Fund Commissioners* v. *Kempshall* (26 Wend. 404); *Cooper* v. *Williams* (5 Ohio 391, 24 Am. Dec. 299); *Buckingham* v. *Smith* (10 Ohio 288); *In re Dancy Drainage District* (129 Wis. 129, 108 N. W. 202); *In re City of New York* (168 N. Y. 134, 61 N. E. 158, at 161); *Smith* v. *City of Rochester* (92 N. Y. 464); *United States* v. *Great Falls Mfg. Co.* (112 U. S. 645); *Pine* v. *New York*, 103 Fed. 337 (affirmed, 112 Fed. 98, reversed on other grounds, 185 U. S. 93); *McCord* v. *High* (40 Iowa 336); *Barrett* v. *Metcalf* (12 Tex. Civ. App. 247, 33 S. W. 758).

As a matter of fact the situation is anomalous. Under the decision of the Supreme Court of Illinois, the State in which this diversion is made, the citizens of the State, who are riparian owners upon the Chicago River are entitled to damages, *Beidler et al.* v. *Sanitary District of Chicago* (211 Ill. 628), while everybody outside of the State of Illinois, according to the claims here urged, who is likewise injured is denied relief, for it must be clear that if riparian owners upon the Great Lakes system outside of Illinois are accorded the rights given to Beidler by the Supreme Court of that State, then these injured riparian owners outside of Illinois have rights which their States may enforce under the doctrine of *Tennessee Copper Co.* v. *Georgia* (206 U. S. 230). The State cannot be compelled to accept compensation but may seek in this court to restrain the injury.

When the cases are examined from this point of view, it will be found the distinction suggested, controls the decisions and further that the Supreme Court has consistently regarded navigable streams in their natural condition as the basis for the determination of the rights both of individual riparian proprietors and the cases of conflicting sovereignties. Here, of course, we have the Great

Lakes States asserting both their own quasi-sovereign and proprietary rights and representing as parens patriae the rights of their citizens, owners of lands abutting upon this waterway.

In *United States* v. *Rio Grande Irrigation Co.* (174 U. S. 690) the Court had before it an application of the United States to restrain the Rio Grande Land and Irrigation Co. from building a dam across the Rio Grande River in the Territory of New Mexico and appropriating the waters of that stream for the purposes of irrigation. The river within the limits of the Territory was not navigable and the purpose was to accumulate and impound waters from the river in unlimited quantities and distribute the same through canals, ditches, and pipelines. On behalf of the United States it was claimed that the Rio Grande was navigable in the State of Texas and that its navigability depended upon a continuous flow of the waters sought to be impounded in New Mexico. This view the Court sustained in spite of the custom of the country, altering the common-law rule with regard to the abstraction of waters for irrigation purposes. The Court points out at page 707 the act of September 19, 1890, and holds it to be a declaration by Congress prohibiting the creation of any obstruction to the navigable capacity of waters in respect to which the United States has jurisdiction. For this reason the Court declines to limit its view to the treatment of the waters of rivers in the innavigable reaches and directs a decree which will prevent any substantial diminution of the navigability of the stream within the limits of its present navigability, thus conserving the stream as nature made it and required, of upper proprietors and upper States, recognition of their obligation not to interfere with the navigability which nature had created.

In *United States* v. *Lynah* (188 U. S. 445) the Government, in an effort to improve the Savannah River, constructed a dam across the river and lands belonging to individuals were flooded, totally destroying their value. This was held to be a taking of private property within the scope of the fifth amendment. The Court said that although the work was done in improvement of the navigability of a navigable river, the injuries could not be regarded as purely consequential. In the opinion of the Court all the early cases were examined at length and the doctrine of *Pumpelly* v. *Green Bay Co.* (13 Wall 316) was followed.

In *United States* v. *Cress* (243 U. S. 316) it appeared that in improving the navigation of the Cumberland River in Kentucky, the Federal Government, by means of a lock and dam, raised the water above the natural level so that lands on a nonnavigable tributary not normally invaded thereby, were subjected permanently to periodical overflows substantially injuring, though not destroying their value. This was held to be a partial taking of property which could only be done upon compensation. In the opinion a very careful reexamination is made of all the cases including *Gibson* v. *United States* (166 U. S. 269); *Scranton* v. *Wheeler* (179 U. S. 143); and *Jackson* v. *United States* (230 U. S. 1). In the opinion of the nature of the servitude of riparian lands is carefully examined and the conclusion reached that—

"It follows from what we have said that the servitude of privately owned lands forming the banks and bed of a stream to the interests of navigation is a natural servitude, confined to such streams as in their ordinary and natural condition are navigable in fact, and confined to the natural condition of the stream. And, assuming that riparian owners upon nonnavigable tributaries of navigable streams are subject to such inconvenience as may arise from the exercise of the common right of navigation, this in like manner must be limited to the natural right. The findings make it clear that the dams in question, constructed by the Government in the Cumberland and Kentucky Rivers, respectively, are for raising the level of those streams along certain stretches by means of backwater, so as to render them to the extent of the raising, artificial canals instead of natural waterways."

In the case of *Sanguinetti* v. *United States* (264 U. S. 146) the principles of liability is clearly recognized but relief is denied because it was doubted in that case whether the injury complained of was caused by the structure erected by the Government and because it was not certain that there was "an actual, permanent invasion of the land," since the floods were exceptional and were a mere indeterminate addition to periodical floods which occurred prior to the Government's intervention.

Here the various injuries to the Great Lakes States are permanent and they proceed not from an improvement to navigable waters of the United States in accordance with their natural condition, but from a construction in defiance of nature's intention. On the principle of these cases, it is clear that the States,

cities and individuals, who have improved their lands with reference to the Great Lakes waterway, as nature's provision for their use, and have built up a vast civilization about this waterway which depends upon its maintenance and improvement in order to further its efficiency in performing a service which nature obviously intended it to perform, have the servitude to bear all the incidental damage which flows from improvements in the watercourse, but it is not conceivable that these interests are under any servitude which requires them to bear the injury caused by the construction of any unnatural and artificial watercourses, which not only do not improve the serviceableness of the Great Lakes water system but directly, permanently, and substantially damage it in in the interest of an artificial waterway. In questions of this kind, the existence of a power can be not improperly argued by supposing a critical use of the power. Could the United States acquire a strip of land from Lake Michigan or Lake Erie to the Gulf of Mexico and thus create a great inland waterway by excavating a canal, drawing off the waters of the Great Lakes and terminating the Great Lakes waterway at Niagara Falls? Perhaps it is not necessary to answer that question as to the power of the Federal Government, but clearly if the United States has the power to create any such waterway, the power is subject to the limitations of the fifth amendment and the damage caused to a great industrial civilization which has built itself securely about the Great Lakes could not be called incidental to the improvement of navigable waters of the United States.

4. In any event, the acts of Congress for improvement of navigation must be reasonably appropriate to that end. The acts of Congress in the control and improvement of navigation under the commerce clause of the Federal Constitution must be reasonably appropriate to the ends of navigation and not arbitrary or capricious or for any other purpose, such as the sanitation needs, real or imaginary, or the power desires of another State or city. It cannot, under the guise of the power to regulate interstate commerce, arbitrarily destroy the rights of riparian owners or the proprietary rights of littoral States without any object not really related to navigation.

The power of Congress to regulate a navigable waterway even when its natural channel and natural basin extends only to an improvement of navigation upon such waterway. That right does not include the abstraction or destruction of the waters of such waterway.

In *Woodruff* v. *North Bloomfield Gravel Mining Co.* (18 Fed. 753), the defendant mining company sought to justify the obstruction of a river with debris from its mining operations upon the ground of Federal authority. On pages 778, 779, the court, Sawyer, J., said:

"Congress is authorized to 'regulate,' but not to destroy 'commerce among the States.' It may, undoubtedly, in its wisdom, obstruct, or, perhaps, destroy navigation, to a limited extent, at particular points, for the purpose of its general advantage and improvement on a larger general scale, such for example, as by authorizing the building of a railroad or post-road bridge across a navigable stream; but it cannot destroy, or authorize the destruction, entire or partial, of the whole system of navigable waters of a State for purposes wholly foreign to commerce or post roads, or to their regulation. If Congress could so authorize, or, as it is claimed, has so authorized, the acts complained of as to make them lawful, then it can authorize, and it has authorized, the filling up and utter destruction of all the navigable rivers, streams, and bays of the State, for there is no limit fixed to the amount of debris that may be sent down; and upon the hypothesis claimed, if such waters are not filled up and destroyed, it is for want of physical capacity to do it, and not because it is unlawful.

"But the injury to navigation is not the only element of a public nuisance in the case. The injuries already accomplished, and those still accruing, as well as those threatened to the cities and riparian proprietors of a large extent of the county, if unlawful, constitute a public nuisance of themselves, irrespective of the injuries to navigation; and there can be no possible ground for maintaining that Congress has authority to legalize such injuries and take away their character of a public nuisance. There is, then, no plausible ground for holding that Congress has ever attempted to make the acts complained of unlawful, or, if it had, that there is any power vested in Congress to effect that purpose. These acts, therefore, have not been legalized by reason of any congressional action."

While the power of Congress in the control of navigation under the interstate commerce clause is plenary within its field, it has always been recognized that its acts under that power could not exceed what was reasonably necessary for the improvement of navigation.

Could it be reasonably claimed that Congress has the power to drain the Great Lakes? If Congress has the power, it may reduce the Great Lakes, and par-

ticularly Lake Michigan, to nothing more than a small river or canal following the lowest part of the bed of the lake, and leave the property and the great cities of the Lake States, in effect, stranded upon the edges of this dried-up basin. It seems to us unthinkable that Congress could have that power. Certainly Congress could not exercise that power for the sanitation needs or power desires of the State of Illinois. It seems equally clear that they could not exercise that power without any reasonable relation to the ends of navigation. If these conclusions are correct, then there is a limit to the extent to which Congress can abstract the waters of the Great Lakes and lower their water levels and impair the navigable capacity. If there is a limit, the question is then present as to what is the proper definition of that limit. It seems clear that it could not in any event exceed the amount of abstraction which would be reasonably necessary for navigation upon the Des Plaines and Illinois Rivers.

The decisions of the Supreme Court with respect to the use and obstruction of highways offer an instructive analogy. In *Barney* v. *Keokuk* (94 U. S. 324, 342, 24 L. Ed. 224), it was held that the public authorities could not authorize permanent obstructions like a depot building on the streets of a town. In this case the public authorities had attempted to authorize a railroad company to occupy a public street with a depot building. The owner of the adjoining lots brought ejectment. The Court said:

"The circuit court is clearly correct, however, in holding that the construction of a permanent freight depot in Water Street was an unauthorized and improper occupation of that street. It was a total obstruction of the passage; and this, as we have said, cannot be created or allowed. It is subversive of, and totally repugnant to, the dedication of the street, as well as to the rights of the public."

The Court stated that it made no difference in its opinion whether the public owned the fee of the street or merely an easement for highway purposes. The rule was laid down that the public authorities could not authorize any obstruction in a public highway, and that the public authorities could not authorize any use of a public highway for any purpose other than that of a public avenue of communication. This doctrine is recognized in the following cases:

Burlington Gas Light Co. v. *Burlington, etc., Ry. Co.* (165 U. S. 370, 17 Sup. Ct. 359, 41 L. Ed. 749); *Muhlker* v. *N. Y. & Harlem R. Co.* (197 U. S. 544, 25 Sup. Ct. 552, 49 L. Ed. 872); *Sauer* v. *City of New York* (206 U. S. 536, 27 Sup. Ct. 686, 51 L. Ed. 1176).

Is not the trust of the Federal Government in the navigable waters of the United States just as sacred and of as high a degree as that of the State in a public highway? If such is the fact, these cases sustain the proposition that the Federal Government has no authority to authorize any use of, or the creation of any obstruction in any of the navigable waters of the United States, except for the promotion of navigation thereon as a public avenue of commerce.

5. The pending bills, if enacted into statute, would constitute a preference of the ports of one State over those of another in violation of article I, section 9, clause 6 of the Constitution.

The question here is as to the construction of article I, section 9, clause 6, of the Constitution, which reads:

"No preference shall be given by any regulation of commerce or revenue, to the ports of one State over those of another; nor shall vessels bound to, or from, one State, be obliged to enter, clear, or pay duties in another."

The question of the construction of this clause has been raised in only two cases. In *Pennsylvania* v. *Wheeling Bridge Company* (18 How. 421), it was held by a divided Court that this clause did not apply to the circumstances of that case. In *South Carolina* v. *Georgia* (93 U. S. 4), where the clause clearly had no application to the facts, the Court, at page 13, said:

"It was there said that the prohibition of such a preference does not extend to acts which may directly benefit the ports of one States and only incidentally injuriously affect those of another, such as the improvement of rivers and harbors, the erection of lighthouses, and other facilities of commerce."

This clause is an express limitation upon the power of Congress in regulating commerce and cannot be understood as applicable to those laws only which are passed for the purpose of revenue (*Gibbons* v. *Ogden*, 9 Wheat. 1, 191).

It is submitted that the true application and construction of this clause is as follows:

Congress may improve the harbors of a particular State and create therein additional facilities for the convenience of commerce without making a like improvement in the ports of another State, and, although the result of these improvements may be to attract some commerce from the ports of the second State to the ports of the first State, by reason of the additional conveniences and

facilities for commerce thus provided, the detriment to the ports of the second State is incidental and not within he terms of the prohibition. The ports of the second State have all of the advantages and natural facilities which they had before the improvements in question were made. Nothing has been taken away from them. However, if Congress undertakes not merely to provide additional facilities and improvements in the ports of one State which it does not provide in the ports of another, but, in addition thereto, attempts to take away from the ports of such other State the facilities which existed therein in a state of nature and transfer to the ports of the first State, it is a direct preference and prohibited by the terms of this clause. It would not be contended that Congress could make a valid law requiring all navigation in the Northwest Territory to be carried on in and through the ports of Illinois and prohibit the carrying on of any navigation in or through the ports of Wisconsin, Michigan, or other States of the Northwest Territory. Such a law would clearly violate this clause of the Constitution. If, on the other hand, Congress should pass a law directing that all of the water in the ports of Wisconsin and Michigan should be taken away and given to the ports of Illinois, can it be said that such a law would be any the less within the prohibition of this clause? The same result has been accomplished. It is not the fact of improvement in the ports of Illinois which may incidentally attract commerce from the ports of Wisconsin and Michigan which renders the law invalid, but it is the fact of taking away from the ports of Wisconsin and Michigan their natural navigation facilities and transferring them to the ports of Illinois. If that be conceded, can it be said that if Congress passes a law taking away from the ports of Wisconsin and Michigan 4 to 6 inches, or any other substantial part of their navigable capacity, and transferring such water so taken from the ports of Wisconsin and Michigan to the ports of Illinois, that it is any the less within the language and spirit of this prohibition?

The prohibition of this clause is not against a little preference, or against a medium preference, but against any preference. Can it be said that taking the water out of Milwaukee Harbor and giving it to the ports of Illinois is an incidental effect on Milwaukee Harbor? It is a positive and direct act by which the navigation facilities of one State are taken away and given to another State.

We say that it will not do to say that an express limitation upon a power delegated to Congress shall be ignored because the enforcement of that limitation will limit the very power for the control of which it was adopted. This limitation on the power to regulate interstate commerce was placed in the Constitution by the people for their protection. In a country as large as ours, composed of 48 States, some weak, some strong, without such a provision it would be a simple matter for the stronger States, or a coalition of States to subordinate the interests of one State and its ports to the selfish advantage of another State or States, and to destroy navigation in the ports of one State for the benefit of another. No power to change Congressmen could help the small State.

If taking the waters, which are a gift of nature, away from the ports of one State and giving them to another does not constitute a preference between the States, it would be difficult to imagine what would constitute such a preference. When the waters, constituting a gift of nature in the ports of one State upon which navigation alone is possible, are taken away and given to another State, it is idle to say that the right of navigation remains or that the damage or preference is incidental.

This clause is an absolute bar to any attempt of Congress to take any such quantity of water away from the ports of the complainant States as will constitute an obstruction to, or an impairment of, their navigable capacity and give it to the ports of Illinois. It must be remembered that this is not an act performed in the ports of Illinois without any direct or physical effect on the ports of Wisconsin and Michigan, but it is an act which physically takes place in its inception in the ports of Wisconsin and Michigan and ends in the transportation of their natural advantages to the ports of Illinois.

Mr. NAUJOKS. The Great Lakes Harbors Association wishes to go on record as being unalterably opposed to any increase in diversion for the following reasons:

First: Neither the Public Works Committee nor the Congress has the authority, under the United States Constitution, to pass these bills because the Congress has no jurisdiction in the premises, nor has Congress power to authorize the transfer of huge quantities of water

from the Great Lakes-St. Lawrence watershed to the Mississippi watershed, with substantial damages to the Great Lakes States, the municipalities located on the Great Lakes, and their peoples. Any additional diversion of water from one watershed for the benefit of another is beyond the power of Congress and the Federal Government, particularly when made to create an artificial waterway or artificially to enrich a natural waterway (*Wisconsin* v. *Illinois*, 278 U. S. 367).

Second: The Supreme Court of the United States has expressly retained jurisdiction of this subject matter, and the proper forum is that Court. It has the machinery, and it has functioned many times, both on the application of the State of Illinois and also on the application of the opposing Lake States to determine issues arising out of the Chicago diversion.

Third: The interests of Canada, a friendly foreign nation, with whom we have been at peace for more than 150 years, and which has a vital interest in maintaining the integrity of the lake levels, must be considered.

Fourth: It is the position of the International Joint Commission that if the pending bills have the effect of appreciably lowering the levels of the boundary waters, then it is not within the province of the Public Works Committee to attempt to change the amount of the present authorized diversion. Under the Boundary Waters Treaty of 1909 the two signatory nations—the United States and Canada—expressly divested themselves of all authority over the boundary waters as far as raising, lowering, or diverting them was concerned. At the hearings before the House Public Works Committee in June 1952, Hon. A. O. Stanley, Chairman of the International Joint Commission, seriously questioned the authority of the committee to take any action which would appreciably lower the levels of the Great Lakes. The Great Lakes Harbors Association concurs in this position taken by the International Joint Commission.

Fifth: Any additional diversion would effect a preference for the ports of Illinois over those of New York, Pennsylvania, Ohio, Michigan, Indiana, Wisconsin, and Minnesota, and is, therefore, unconstitutional (*Wisconsin* v. *Illinois*, 278 U. S. 367).

Sixth: Any additional diversion would work injury to the States of New York, Pennsylvania, Ohio, Michigan, Indiana, Wisconsin, and Minnesota, depriving them and their citizens and property owners of property without due process of law and depriving such States of the natural advantages of their position, contrary to their sovereign rights as members of the Union.

Seventh: Additional diversion is not required to provide an adequate waterway from Chicago to the Mississippi River. The present diversion is ample and the increased depth can be obtained by dredging without requiring a change in the locks or dams. The present 9-foot channel can carry up to 100 million tons of cargo annually. Considering the annual tonnage transported on the waterway of roughly 17 million tons, an increase in diversion is unwarranted from a practical and economic standpoint and would be grossly inequitable to the Great Lakes States, their municipalities, people, and industries, and contrary to the power and authority of the Federal Government.

Eighth: Any improvement in navigable depths on a waterway from Lake Michigan to the Gulf of Mexico should not be made at the expense of the navigable depths of the Great Lakes.

Ninth: Additional diversion would be of no material assistance in cleaning up the Chicago drainage canal or the Illinois River. The only permanent and effective way of cleaning up these streams is by keeping out of them any untreated or partially treated sewage or other material which would pollute the water. Today the lower Illinois River has reached such a stage of self-purification that the residents of that area are again able to enjoy fishing, bathing, boating, and other healthful water sports. If additional diversion is granted, it is certain that the Sanitary District of Chicago would be tempted to dump into the sanitary canal, and thence into the Illinois River, untreated or partially treated sewage which is now being deposited in sludge beds along the banks of the sanitary canal and the Chicago River, and which is causing strenuous protests from the residents of those areas because of the obnoxious odors.

Tenth: The Great Lakes Harbors Association suggests that the real motive behind this demand for increased diversion is the desire on the part of the sanitary district to obtain additional hydroelectric power to be generated by the facilities it owns and operates at Lockport, Ill. While the sanitary district has repeatedly denied that it is interested in the development of additional power at Lockport, its denials cannot be given much weight because at every opportunity the sanitary district has pressed for increased diversion of lake water in order to increase the power to be produced at Lockport. On May 8, 1946, a headline in the Chicago Daily News carried the statement that "By diverting more lake water, Lockport can double power." This article stated that Mr. Horace P. Ramey, assistant chief engineer for the sanitary district, asserted that increased diversion can double the power output at the Lockport plant of the sanitary district. In 1947 the suggestion was made by Mr. Anthony A. Olis, president, board of trustees of the Sanitary District of Chicago, that increased diversion of lake water was needed for development of atomic power because of the establishment of the Argonne Laboratory along the banks of the sanitary district canal, 20 or 25 miles southwest of Chicago. In 1950 an application for increased diversion was again made by the sanitary district in dispatches to then President Truman, to ex-Secretary of Defense Johnson, and to the Illinois Senators, to obtain additional hydroelectric power during the coal strike. From the foregoing it is plain that the sanitary district is interested in obtaining additional diversion for power purposes.

Eleventh: The United States Supreme Court in 1929 pointed out that the Great Lakes States and their peoples suffered irreparable and comprehensive damages due to the unlawful lowering of the levels of the Great Lakes by the Sanitary District of Chicago and the State of Illinois. It is plain that Great Lakes commerce will suffer increased costs if the levels of the Great Lakes are lowered through diversion at Chicago. As Secretary of War Stimson well pointed out in 1913 in denying an application by the Sanitary District of Chicago for a diversion of 10,000 cubic second feet—

> * * * in a word, every drop of water taken out necessarily tends to nullify costly improvements made under direct authority of Congress throughout the Great Lakes and withdrawal of the amount now applied for would nullify such expenditures to the amount of many millions of dollars, as well as inflict an even greater loss on the navigation interests using such waters.

In the light of the present critical international situation it is important that shipping on the Great Lakes be maintained at its highest level in order to carry the important iron ore from the Mesabi Range to the fabricating plants which, in turn, furnish the steel and iron needed to provide the weapons for maintaining this Nation strong and free.

In conclusion, the Great Lakes Harbors Association affirms its unalterable opposition to any increase in diversion from the Great Lakes-St. Lawrence watershed to the Mississippi watershed via the Chicago drainage canal. The pending diversion bills are but another in a long chain of attempts by Chicago interests to defeat or circumvent the United States Supreme Court decree of April 21, 1930 (281 U. S. 696).

Aside from the question of jurisdiction and power of Congress in the premises, no necessity or justifiable excuse exists for increasing the diversion of lake water at Chicago in excess of the amount fixed by the Supreme Court because—

(1) Chicago today has no health problem related to diversion;

(2) The Illinois Waterway has more than enough water to handle all the traffic available, and last year carried almost 17 million tons without delay or hindrance;

(3) Additional diversion would not alleviate or stop any erosion or damage to riparian property along the Great Lakes due to high waters and winds;

(4) The Great Lakes have passed the peak of the recent high cycle and are now on the downward path and the lake levels can be expected to continue their downward trend for many years;

(5) Additional diversion will not clean up any objectionable conditions along the Illinois Waterway as long as the sanitary district continues the practice of dumping untreated or partially treated sewage into such waterway. The only positive and sure cure for any unsightly or insanitary conditions in this waterway is to keep all polluted matter out of such waterway;

(6) Any additional diversion at Chicago will result in large and continuing damages to the Great Lakes States, their port cities, and their people;

(7) Inasmuch as the waters involved here are international in character, the only permanent and equitable solution to this problem is to have the eight States bordering on the Great Lakes study the problem of water uses, regulation of the levels, and so forth, and enter into an agreement or compact on this subject as provided in the United States Constitution, subject to approval by Congress and Canada.

Elaborating on that, first on the question of navigation, the Illinois Waterway last year and this year will carry a little under 17 million tons of commerce on the presently authorized diversion of 1,500 plus 3,200 cubic feet per second. General Pick testified before Special Master Hughes, 1,000 second-feet would carry a commerce of 100 million tons on the Illinois Waterway. So they have only attained approximately 15 percent of that goal and are presently getting 3 times the amount of water needed.

I checked with the Army engineers at Chicago and they say ever since the Illinois Waterway has been open for navigation in 1933, that there has been no interference with commerce at all; that boats

and vessels have always been able to carry it on the present channels and depths. Secondly, on the question of clearing up the Illinois Waterway, I wish to suggest that that is a part of their sanitation program and is a reversion to the dilution method of sewage disposal, which the Supreme Court and the master condemned in their reports and decisions, because if they attained the purification which is capable under a modern sewage-disposal plant, their own chief engineer testified before committees of this Congress and before Special Master Hughes in the Supreme Court of the United States, where he said—and I am now referring to Mr. Langdon Pearse's testimony—and why they do not bring them up here to testify and subject themselves to cross examination on this phase of it I do not know, but here is what he testified to before the Rivers and Harbors Committee in 1924:

> The biological processes, such as sprinkling filters or activated sludge, when properly operated produce a high-grade effluent, requiring no dilution, in which fish can live. The effluent further will produce no nuisance and can be turned into a water course, even though dry, without fear of consequences.

Years later Mr. Pearse, in his testimony before Special Master Hughes, reaffirmed this statement as to the high quality of the effluent from the activated sludge plant. He said that was correct and said that the fish were then living in the sanitary district effluent which was trickling from the trickling filters right there. He said young carp were living in the effluent, and some shiners from Lake Michigan and others.

Mr. Howson, a nationally known expert, testified to the same effect, as did Mr. Gascoigne, formerly from Cleveland. Mr. Townsend testified that—

> * * * the effluent of an activated sludge plant is stable, odorless, clear, and sparkling. The effluent of an activated sludge plant discharged into an open tank will remain stable indefinitely.

Mr. Gascoigne also testified that the effluent of a modern activated sludge plant is stable, odorless, and clear, and will remain stable indefinitely.

The sanitary district, in a pamphlet which was issued in 1928, said the same thing, and said:

> Final settling tanks is the next step in the activated sludge process. After the process of aeration is completed, the mixture or sewage and activated sludge passes through mechanically cleaned tanks; the effluent as discharged from these tanks is a clear, odorless liquid * * * nonputrescrible. * * *
>
> Almost as clear as drinking water and quite as harmless as it finally leaves the plant through an outlet and into and through an artificial channel which discharges into the Chicago River.

In other words, the effluent that you say, that was shown here yesterday, can be placed in the Chicago River and in the Illinois River without fear of the consequences. It should support fish life if the activated sludge plants were well operated.

Now, gentlemen, if their claim is that they want to clear up the channel some more, then I say that that is connected with their sanitation problem and is on a nonlegal basis, because the United States Supreme Court in 1929 said that they can only consider in Congress in relation to their power under the commerce clause.

As Mr. Johnson pointed out, that has to be in connection with the port of Chicago and the Chicago River as a part of the Great Lakes-

St. Lawrence watershed system, and not as a part of transferring huge quantities of water from the Great Lakes-St. Lawrence watershed to another watershed, to the detriment and damage of the people of the Great Lakes area.

I want to say that the people in Cleveland and Detroit and Milwaukee and Chicago settled on the Great Lakes because of the benefits that accrued there. It was not to be expected that any temporary majority in Congress could at any given time take away those benefits and the rights and privileges; but they also have some detriments and damages.

That is the third point I want to discuss. That is, in times of extremely high water the people residing on the Great Lakes—the riparian owners—are apt to suffer some damage, but they have to take those consequences with the good that accrues and the benefits that they get.

Will increased diversion at Chicago help alleviate or cure any damages suffered from high waters? The Army engineers say "No." They said it will not help. We can demonstrate that statistically very easily.

The proponents of these bills said yesterday that 1,000 cubic feet per second of diversion at Chicago will lower the levels of the Great Lakes 0.8 of an inch. I will go along with them on that. All right. They are taking 3,200 second-feet through the canal now. The capacity is 10,000 second-feet. You subtract 3,200 from 10,000 and you get 6,800 second-feet more, if you open the gates wide. That is all that it will have an effect on lowering the levels, which means it will lower the levels in 10 years, 5 inches.

Mr. DONDERO. In that 3,200 cubic feet per second you are also referring to domestic usage?

Mr. NAUJOKS. 1,700 plus 1,500. So in 1 year it would have the effect of lowering of 1¼ inches of the lake levels. That is no help. In 1 year the levels dropped 0.7 of an inch——

Mr. DONDERO. 0.7 of a foot.

Mr. NAUJOKS. Yes; pardon me. Which means about 8 inches already. So your only proper solution is regulation of the levels of the Great Lakes by means of the installation of regulating works at the St. Clair River and down the Niagara and the St. Lawrence, near Gut Dam, which has been recently removed. That is the only way. Then you can hold them in a range of 2½ feet.

All of the great engineers studied that—Shenahan, and Freeman, and others. The only reason it has not been done before is because it was a matter of economics. In 1926 the Corps of Engineers turned it down because it was not economically justified. They said it cost too much. At that time the shoreline was not built up as much as it is now. What their attitude is now I do not know.

When you consider their report said the loss along the Great Lakes was $81 million, it certainly would not cost any more than $81 million, and they would make that up in 1 year. With the damages we will have this year—maybe they will not run $81 million, but they will run in the millions. Certainly that would take care of it.

I want to suggest this also: For more than 50 years the Chicago water diversion controversy has been before the courts and before every Secretary of War. It has been before two Presidents. The Olds-Nelson War Production Committee, and every other place they could

go, the sanitary district of the State of Illinois has gone in order to try to get increased diversion. One time they wanted it as a health measure.

As Mr. Olis pointed out, the people along the Illinois Waterway are the healthiest people in the State of Illinois. I don't know why, but the incidence of certain diseases is lower than it is through the rest of the State. Some of it is due to the fact that they dig deeper wells than other parts of the country, which may be contaminated. So the claims they made 5 years ago that the people would die off like flies if they did not get more diversion have been proven false. There was no unusual number of deaths due to that cause.

Mayor Kelly boasted at that time that Chicago has the finest water and the healthiest people in the world—and he was right. So there is no health problem related to diversion at all.

There is no navigation problem. They can handle 100 million tons along the Illinois Waterway through the port of Chicago.

What is it then? The only think I can think of its that they want it for power. If they say they do not want it for power I will refer you to pages 162 and 163 of the record of hearings of 1 year ago. You will remember, as I pointed out then, that every time they had an opportunity during the coal strikes of 1946 and 1950 they came along and said, "We have to have more water for power." Mr. Ramey is here today. He was quoted in this newspaper article in 1946, which is in the record, as saying that all you have to do is turn the valve and you can double the power at Lockport. That is what they want.

Mr. DONDERO. May I interrupt to say that I think this committee got the impression yesterday that this additional water was wanted in order to help purify the effluent after it leaves the reduction plants of the city of Chicago.

Mr. NAUJOKS. Yes.

Mr. DONDERO. They stated that about 92½ percent was pure. This additional water would make it better. That is the impression I got.

Mr. NAUJOKS. Yes. I thought I answered that, Mr. Chairman, in saying that is tied in with sanitation, and that is an inadmissible purpose for which this Congress, if it has any power at all, certainly could not authorize increased diversion. It is the very thing the Court knocked down in its decision of 1929–30. They referred to that again in 1933. That is a part of their own dilution method. It belongs to the Dark Ages and not to our 20th century, in the year 1953.

Milwaukee, New York, Cleveland, Detroit, all have the same problem. Maybe they do not have as many people, but all they need is more plants. They are taking care of it and are not complaining. Nobody is being harmed. They have the identical problem and yet these people try to make a great thing out of it here, as though it was something unheard of.

I want to say that if they devoted the same amount of time and energy to attempting to solve that problem and work it out like other States do, they would not have to come before Congress every session and force us to defend this decree before this committee and this Congress, as we have to do every session.

I do not think it is right or justified to put us to that expense. There is no merit, as I say, to any view you could possibly take of these bills, nor is there any justification.

One more thing in answer to the Congressman from Michigan. I want to say I agree with him on a survey, but not with diversion. Not any diversion of water—not one drop. It is just a way of getting their foot in the door and then they will want more.

In an article which appeared in the Chicago Tribune on Sunday, July 5, they said that their program called for getting 1,000 and 2,000 and more. That is what they want. Like Mr. Meserow said, they want 10,000. They will not get it if we can help it.

Thank you.

Mr. DONDERO. Thank you for your statement, Mr. Naujoks.

It is 12 o'clock and the time has expired. All time has expired. The hearings have been concluded. The chairman has several telegrams that have been sent in, and 1 or 2 letters in opposition to this project. Without objection, they will be included in the record.

(The telegrams and letters are as follows:)

MILWAUKEE, WIS., *July 16, 1953.*

Hon. GEORGE A. DONDERO,
Chairman, Public Works Committee,
House of Representatives, Washington, D. C.:

Great Lakes Harbors Association, composed of 20 port cities, is unanimously opposed to any bill increasing diversion of water from Lake Michigan in excess of quantities authorized by Supreme Court decree. Lake cities have suffered great and continuing damage due to past water diversion. Chicago must not be allowed to solve its sewage-disposal problem at the expense of other lake cities.

DANIEL W. HOAN,
President, Great Lakes Harbors Association.

STATEMENT OF CHARLES C. FICHTNER, EXECUTIVE VICE PRESIDENT, BUFFALO CHAMBER OF COMMERCE, ON H. R. 3192 TO 3197, INCLUSIVE, H. R. 3208 TO 3214, INCLUSIVE, AND H. R. 3300, JULY 1953

All of the bills under present consideration at this hearing deal specifically with the diversion or withdrawal of water from Lake Michigan to the Chicago Drainage Canal in excess of the quantity decreed by the United States Supreme Court in 1938.

Legislative efforts to override that decree have since failed on more than one occasion. In 1943, the Buffalo Chamber of Commerce pointed out that in the preceding year water levels in Buffalo Harbor were at such low stages that ships with full loads could not enter. Either they had to be loaded below capacity or had to be partially loaded at another port, an economic waste in either event.

Since then, Congress has approved the deepening of Buffalo Harbor from its former project depth of 21 feet to 22 feet in earth and 23 feet in rock. The approved project is only 32 percent completed. In Black Rock Channel the project depth is still at 21 feet. Even the approved project in Buffalo Harbor will not have sufficient depth, in normal times, to float the new large lake vessels when fully loaded, that have been placed in operation since the Buffalo project was approved.

Similar legislation was before this committee last year when lake levels were at an all-time high and when there were many complaints of damage to shore properties. We pointed out in a statement to your committee at that time the unhappy experiences we have had with water fluctuations in the past and the impact of low-water stages upon our industrial and shipping interests.

The fluctuation of water levels in the Great Lakes is a matter of historical record. Since the peak of last year there has been a drop in lake levels; if this recession runs true to form, its effect upon lake shipping will become serious. Navigation takes advantage of every inch of available draft. As lake levels approach their low stages the loss in tonnage carried is most significant. The monthly mean elevation of Lake Erie dropped from 574.70 feet in May 1952 to 573.72 in May 1953.

The economic justification for the expenditure of millions of dollars to improve Buffalo Harbor is illustrative of the many more millions of dollars that have been appropriated by Congress upon the recommendations of this committee, and its predecessor, at other lake ports and in connecting channels. The impact upon this outlay of funds must certainly be weighed in any consideration of the bills now before you.

The Buffalo Chamber of Commerce is opposed to any diversion of water from the Great Lakes which will reduce the loading capacity and efficiency of the Great Lakes fleet. For that reason the Buffalo chamber is opposed to the enactment of the measures which are the subject of this hearing.

MILWAUKEE, WIS., *July 14, 1953.*

Hon. GEORGE A. DONDERO,
Chairman, Committee on Public Works,
House of Representatives, Washington, D. C.:

Milwaukee Board of Harbor Commissioners desires to record opposition to 14 bills now pending before your committee proposing increased diversion of water from Lake Michigan. Studies by Army engineers indicate that amount of diversion demanded will not alleviate high-water cycle but will cause great damage when Great Lakes revert to low-water cycle by reducing capacity of Great Lakes vessels, by causing harbor dredging, and by lowering of water table with resulting damage to marine structures. We join Mayor Zeidler in demanding that jurisdiction in this matter be retained by United States Supreme Court in accordance with 1930 decree. Will appreciate insertion this message in record of hearings. Thank you for your consideration.

BOARD OF HARBOR COMMISSIONERS, CITY OF MILWAUKEE.

BENTON HARBOR, MICH., *July 14, 1953.*

Congressman GEORGE A. DONDERO,
Chairman of House Public Works Committee,
Washington, D. C.:

Resolution of the City Commission of the City of Benton Harbor, Mich., adopted at a regular meeting held on July 13, 1953:

Resolved, That the City Commission of the City of Benton Harbor, Mich., go on record as opposing the increase of flow of water from Lake Michigan to the Chicago Sanitary and Ship Canal.

EARL L. TIDEY, *City Clerk.*

MANITOWOC, WIS., *July 13, 1953.*

Hon. GEORGE A. DONDERO,
Chairman, House Public Works Committee,
Washington, D. C.:

It is our understanding that hearings will be held soon on legislation that would increase the water diversion from Lake Michigan into the Chicago Sanitary and Ship Canal. The City of Manitowoc would like to be placed on the record as objecting to any increase over the present flow of 1,500 cubic feet per second.

RUDOLPH E. MENCHL,
Mayor, Manitowoc, Wis.

MUSKEGON, MICH., *July 14, 1953.*

Hon. GEORGE A. DONDERO,
House of Representatives:

The city council is opposed to any increase in the flow of water through the Chicago Sanitary and Ship Canal. Any increase in flow will not help materially during high-water levels and could do considerable damage when the water levels are low.

R. J. MILES,
City of Muskegon Heights.

OFFICE OF THE MAYOR,
Milwaukee, July 14, 1953.

HON. GEORGE A. DONDERO,
Chairman, Committee on Public Works,
House of Representatives, Washington, D. C.

DEAR MR. DONDERO: We are informed that on July 15 and 16 your committee will conduct limited hearings on 14 bills, all of which propose additional diversion of water from Lake Michigan for the purposes of the Chicago Sanitary District.

The city of Milwaukee desires to record its vigorous opposition to any legislative action contemplating diversion of water from Lake Michigan in excess of the amounts authoried by the United States Supreme Court in its decree of 1930. We further desire to place the city of Milwaukee on record with your committee as insisting that jurisdiction in this matter be retained by the United States Supreme Court, and that any relief sought by Chicago be sought in the proper manner through the Supreme Court.

The views of the city of Milwaukee in this matter are set forth in a resolution adopted by our common council on January 29, 1952, a certified copy of which is enclosed herewith. Our views as stated at that time are fully applicable to the present situation and to the bills now pending before your committee.

May we respectfully request that this letter and the resolution of our common council be reproduced in full in the record of the hearings before your committee, as evidence of the opposition of the city of Milwaukee to these demands for more water from Lake Michigan, which may benefit the Chicago Sanitary District, but which if allowed would ultimately do great damage to the harbors, the shipping resources, and the recreational facilities of the Great Lakes region.

Respectfully,

FRANK P. ZEIDLER,
Mayor.
HARRY G. SLATER,
First Assistant City Attorney.

CERTIFIED COPY OF RESOLUTION

File No. 51–2858.

Whereas the city of Chicago, the Chicago Sanitary District, and the State of Illinois are again endeavoring to secure congressional sanction for greatly increased diversion of water from Lake Michigan to circumvent the effects of the Supreme Court decree of 1930, issued after exhaustive investigation and after 40 years of costly litigation; and

Where the city of Milwaukee and the State of Wisconsin have repeatedly asserted that this matter should remain within the jurisdiction of the United State Supreme Court and that they would firmly oppose any diversion of water from Lake Michigan in excess of the quantities specified by the United States Supreme Court; and

Whereas bills have been introduced in the 2d session of the 82d Congress intended to circumvent the Supreme Court decree and to bring about greatly increased diversion of water from Lake Michigan, which, if allowed, will result in great injury to the commerce of the Great Lakes and to the large volume of commerce moving through Milwaukee Harbor, and will further jeopardize harbor structures, lakefront installations, and downtown building foundations by causing a lowering of the water table: Now, therefore, be it

Resolved, That the mayor, the city attorney, the board of harbor commissioners and any other municipal agencies concerned are hereby authorized and directed to initiate any steps and procedures necessary to protect fully the interest of the city of Milwaukee and to record before the proper tribunals and in any proceedings which may be held the opposition of the city of Milwaukee to the diversion of water from Lake Michigan in excess of the amount authorized by the Supreme Court decree of 1930; and further that the city of Milwaukee go on record as insisting that jurisdiction in this matter be retained by the United States Supreme Court and that any relief sought by Chicago be sought in the proper manner through the Supreme Court; and be it further

Resolved, That the position of the city of Milwaukee in this matter be brought to the attention of the President and to Senators and Representatives in Congress from the State of Wisconsin.

OFFICE OF THE CITY CLERK,
Milwaukee, Wis., July 14, 1953.

I hereby certify that the foregoing is a copy of a resolution adopted by the Common Council of the City of Milwaukee on January 29, 1952.

[SEAL] STANLEY J. WITKOWSKI, *City Clerk.*

Mr. DONDERO. The committee stands adjourned.

(Whereupon, at 12 m., the hearing was concluded and the committee adjourned.)

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